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The American Journal of Photography

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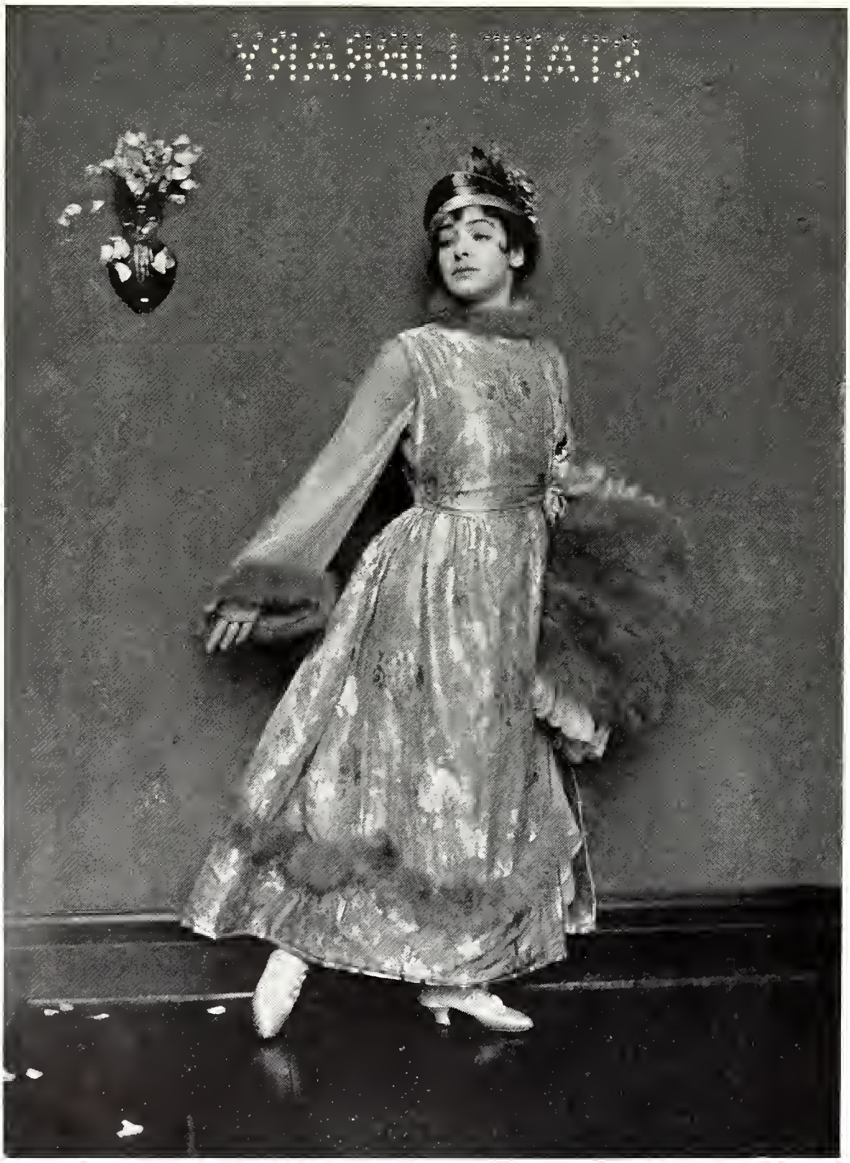

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LEE ESTRELLA
GERHARD SISTERS

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Portrait-Lighting with Mercury-Vapor Lamps

GERHARD SISTERS

PROBABLY the bane of every photographer's existence is to have arranged for a sitting with a particularly desirable subject and then to find when the time comes that the day is either stormy or dark so that the appointment must be canceled. How much time is lost on occasions of this kind it is hard to estimate, but there is no doubt that if it could be figured in money, it would more than pay for the most expensive artificial lighting-equipment that money could buy.

The mercury-vapor light for photography cannot be excelled either for the studio, home-portraiture or enlarging. In the studio this form of artificial light is an equivalent for daylight: it accomplishes all that daylight will, and is dependable and uniform.

The highly artistic value of the light, its soft, wide diffusion, its uniformity and the absence of high heat-radiation, its commercial efficiency both in economy of maintenance and its low current-consumption, make it an ideal light for portraiture. To think we can have daylight in any place and at any time! Surely the day of miracles has not passed when we can press the button and have light so that the horror of the dark day is no more. What a relief to work in our holiday-season, when we have short days and many sittings. It is also excellent, when used in connection with daylight, to shorten the exposure in photographing children and groups. When used in this way the lamp is placed near the greatest source of daylight-illumination, using a reflector for the shadows or another light of less intensity.

The plain light, the line and Rembrandt-lighting all are easily managed with a little practice. Also the beautiful silhouette-reflections on white grounds, the pretty double lightings and the snappy highlights of which mercury-vapor is a sure guaranty; for many of the artificial lights have a tendency to block the highlights, and the sitter can even look directly at the light without squinting, as there is no glare.

It is easy to maintain a standard from day to day throughout all seasons of the year, making it simple for the operator and leaving the expert free to cope with the intricacies of the art exclusively.

The red reflector is a great improvement on that deathly pallor, giving a normal color-value, and the results are far more true to life. It also relieves the impression of the cheap postcard-studio, and adds so little to the time of exposure that one scarcely notices the difference. The exact time of exposure varies according to how close you work to the light and its intensity; also, whether a white or dark background is in use, just the same as with daylight. You can make an instantaneous or a long exposure, depending on what key you are working in. There is no definite rule; a few exposures will give you the time and distance of the lamp. In our studio average exposures for heads are about 2 seconds; for half-lengths, 2 to 3 seconds; for full figures in light clothing, 2 to 3 seconds, and for full figures in dark clothing, about 4 seconds.

Of course you have heard of the little home-portrait outfit, but have you tried it out? That is the main thing, for to test it means to have one for your very own. Just stop a moment and consider the advantages that it has to offer. Think of going into the home and photographing bridal groups on the very spot where the marriage-ceremony is performed, using the floral decorations for backgrounds and thus commemorating the occasion for all time! What a comparison with the stereotyped picture made the next day with a withered bouquet. With a little persuasion we get the bride alone, the bride and groom, and the bridal party, never forgetting the bride and her mother and father. They are all made quickly, as there is no shifting of backgrounds or change of scenes, and this always means good orders.

LYDIA SCHILLING GERHARD SISTERS

Only one lamp on a tripod, and connected to any handy lamp-socket is necessary, used at an angle of 45 degrees. Naturally, the closer you place the lamp the faster the exposure. We use a piece of muslin for a reflector. The lamp is sent out some time before the ceremony, and tested, and the fuse is strengthened. When we use the lamp we request them to turn out some of the other lights in the house, as at that time they usually have every light burning. A very distressing incident occurred one time, when we put a whole bridal party and about three hundred guests in the dark, for about ten minutes, by blowing a fuse. The mother became excited and cried, "You have all my guests in the dark;" but nobody else seemed to mind it, and we received a good order. Since then, however, we have used every precaution. It is also a very fine advertisement among the guests, and they show a great interest in the light, and readily agree upon it being a wonderful improvement on the nerve-racking flash — no smoke or changing of smoke-bags; you can expose all the plates they will stand for in a few minutes. You leave a splendid up-to-date impression in the house, and a good order is assured.

This little outfit, weighing only twenty-eight pounds, portable and folding, is taken out for all our home-work, making it practicable to get any effect possible in the studio and a thousand others that are had only in the home. Think of the grandmother or mother in her favorite chair in the same room, radiating that sweet smile and tender love that have helped you to grow; is there anything in this world you would take for that picture when your mother is no more? The chil-

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AT THE PIANO GERHARD SISTERS

dren at home with their toys, in a natural attitude and environment, may be photographed in the pretty nooks and corners, that are always in a subdued light. The mercury-vapor lamp makes these home-backgrounds possible. Without it you can work only at the windows, and by sacrificing the variety of effects which means a larger order. At the windows we use the lamp only for the shadows. It can be plugged into any lighting-circuit; there is no cost of maintenance outside of the occasional replacing of a tube costing about $12. We have an Eastman Skyscraper camera, a home-portrait stand, a Zeiss Tessar lens and always use portrait-films for this purpose. You can take half a dozen double holders loaded with portrait-film in a small parcel under your arm, so that altogether this makes the outfit very compact and easily managed.

The new enlargement "gridiron" tube-lamp will illuminate evenly an 8 x 10 negative without condensors and, operated from a switch, does away with the old-time tipping and is ready for use at any time. You cannot ask for a better money-maker than your speculative enlargement. Being properly equipped it is a pleasure to make them when you can do so with the same certainty as contact-prints.

What may we not aspire to? With professional hours from 9 until 4 o'clock, we can plan our work with an assurance that comes only from knowing it can be done, and we can put the time that was formerly wasted waiting for good light and crowding our appointments after cloudy weather into improving our work. The mercury-vapor light has made all this possible. At our coliseum, where there was no daylight, we photographed five hundred men *separately* in three days. We had one home-portrait outfit, and it burned steadily without any trouble — no refilling of carbons. Our exposure-time was determined on the first day, and most of the portraits were timed alike and were splendid. We made two exposures of each, placing one light about four feet from the subject, at an angle of 45 degrees, and inside a reflector.

The Need of Composition

To convey an idea it is generally necessary to have some principal object to which all else in the picture shall be subordinate. Since one object, if isolated, is rarely able fully to express an abstract idea it becomes necessary to introduce additional detail, which, without competing for interest with the principal object, either shall explain or emphasize it. Since this minor detail must be so arranged within the picture-space as to leave no portion either vacant or unduly obtrusive, and since in order to do this it is necessary to lead the vision in orderly progression over the entire picture, a knowledge of the fundamental principles of composition is necessary. Some workers may say that they compose by instinct, or rather by innate feeling; but it will be found that in such cases the act of composition has been preceded by study of pictures and unconscious absorption of the principles involved.—Paul Lewis Anderson, in *Pictorial Landscape Photography.*

The Eyes in Portraiture

W. HOWARD VALENTINE

EYES, the poets tell us, are the windows of the soul, and upon the expression of the eyes more than on any other one feature does success in portraiture depend. A careful study of this part of the subject will therefore well repay the amateur whose ambition it is to secure lifelike and natural pictures of his friends, while it is no less important in the case of those whose aims are more in the direction of pictures which are not primarily portraits.

How often do we see a photograph of what is intended to be a smile, but which is more properly described as a grin? If the matter is analyzed, the source of the failure is found to be in the fact that while the lower part of the face is simulating a smile, the expression stops short of the eyes themselves. We laugh as much with the eyes as with any part of the face, as a glance at any successful picture of a smile will show, and as indeed the phrase "laughing eyes" confirms.

The expression in the eyes has to be caught and reproduced in the photograph. But how? In the first place, it must be there, or we cannot photograph it. If the sitter has a dull, vacant stare, the photograph will surely show a dull, vacant stare also. We must, therefore, see that we get the expression; and in the case of the eyes there is more need for it to be natural and spontaneous, not assumed, than with the other features, since it is less easy to assume, less under control. Perhaps the best advice that can be given for securing it is to study to keep the sitter interested, and to leave as few opportunities as possible for a relapse into boredom.

The direction in which the eyes are turned is of the utmost importance. In true portraiture there is one rule which ought never to be broken, and that is, if the eyes do not look straight into the camera they should be turned in the same direction as the head. That is to say, either they should look straight ahead, or else, the head being turned, the eyes may be turned a little more still. If the head is turned one way and the eyes another, one gets a crafty, on-the-watch kind of expression, which may be valuable in subject-pictures, but which is not usually a popular expression in what purports to be a likeness.

Eyes which are at all full or inclined to protrude, especially if the eyelashes are dark and long, may be turned downwards, and so any unpleasant effect of undue prominence is lost. If for any reason the eyes are to be turned upwards, the head must also be turned in the same direction, so that too much of the white of the eye does not show.

It will generally be found that the two eyes are of unequal size, or unequally opened. This can be observed in almost all persons, but it is not very noticeable with many. When it is, it can be made less conspicuous by posing the head so that the eye which is larger or more open is the further off. Any one having this peculiarity, therefore, is not a good subject for a full-face portrait.

Blinking or winking during a long exposure does not usually interfere with a good rendering of the eyes; though if it were done deliberately or very frequently it is possible that it would dim them over somewhat by superposing on

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A WELL-KNOWN EXPLORER — GERHARD SISTERS

the strong contrasts of the eye the light image of the eyelid. Movement of the eyes themselves is another matter, and a thing to be watched for. A sitter may easily turn her eyes towards the camera, quite unconsciously, just at the moment of making the exposure, or, perhaps, during the exposure itself. A large area of very light wall in a studio, or a white background not in use hanging up in front of the sitter, will sometimes interfere very much with a proper rendering of the eyes by filling them with glare.

In retouching one often sees the eyes completely spoiled. Some retouchers seem to hold a theory that there should be only one spot of reflected light in the eye, which they call the "catch-light," and everything else is carefully removed. This particular light is sharpened up and made more intense, and they may even draw in the outline of the iris. Inasmuch as the eye is a reflecting-surface of a particular form, and that form is indicated by the appearance of what it reflects, any work done there must be done with the utmost care; in fact, except in grossly imperfect negatives, it is very much better not to do any work on the eyes at all. It is almost sure to give an unreal effect, and there is no part of the face where the most trifling touch of the retouching-pencil or knife can do so much harm.

It will have been gathered from what has already been written that the time at which to do any "retouching" of the eyes is before exposing the plate, if that is not a paradox. That is to say, we should study when arranging the sitter to get the right effect straightaway, so as to remove all necessity for hand-work on the negative. The lights and shadows in the eye can be seen

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CLEO GASCOIGNE GERHARD SISTERS

from the point of view of the lens; or, if the photographer does much of his portraiture in the same place and under similar conditions, he will learn to know what the eyes will reflect.

One difficult type of portrait from this point of view is that of the person who wears spectacles. We cannot take them off or we at once get an unnatural appearance; nor can we do as some heedless professional photographers have done, or at least have been advised to do, and that is to keep a pair without glasses for use by their sitters.

The appearance of the eye through a spectacle lens is quite different from its appearance without a glass, and may be most characteristic. The glasses themselves will appear different for different individuals, since they are not mere plain glass. Besides, an eye which has been accustomed to look at things through a glass cannot possibly look natural when that glass is taken away. The real expression of the eyes is lost.

It is not actually very difficult to get the glasses so that they show the eye as we are accustomed to see it. All that has to be done is to make quite sure that the angle at which they are seen from the lens is such that the glasses do not reflect any light object so as to hide the eyes beneath. A trifling highlight on the glass is not anything to worry about usually—it will help to give the impression that there is a real glass there and not merely an empty frame. A very slight movement of the head may be sufficient to get rid of a troublesome reflection.

If there is a slight glare upon the glasses it can sometimes be remedied in the following way: The back of the negative is covered with matte varnish, plain or else very feebly tinted, and then, the outline of the glasses having been marked out very carefully on the varnish with a finely pointed pencil, the varnish within that area is scraped away. This will get rid of the glare without affecting the expression of the eye itself; but it cannot be done when the reflected light on the glass is at all strong.—*Photography and Focus.*

Modifying Negatives for Enlargement

The Ideal Negative — Defective Negatives — Choice of Papers — Control of Contrast Intensification and Reduction of Negatives — Local Treatment

PHIL M. RILEY

THE refinement of the small camera and its present vogue have brought enlarging into almost as common practice as ordinary contact-printing. In this departure from former usage the convenience and economy of the small camera as well as the fascination of the enlarging-process have been the chief contributing factors. And then it has been demonstrated that under favorable conditions an enlarged print from a small negative can equal in quality and excel in effect a contact-print from the same negative. Indeed, it is often claimed that an enlargement can be made as easily as a contact-print; yet if the quality of the print be an object, this statement is true only when the scale of contrast in the negative lies within the range of the available developing-paper.

Upon the character of the negative depends the measure of success, and too much importance cannot be attached to this fact, for the printing-qualities of a negative, like its blemishes, are magnified and emphasized by enlargement. Obviously, negatives to be enlarged should approach the ideal as closely as possible. And what is that ideal? Experts claim that the best enlargements are made from moderately vigorous negatives having adequate shadow-detail and a long scale of gradation without great density of the highlights, visible traces of fog or granularity; in fact, such negatives as would be the natural result of full exposure and avoidance of over-development, would permit magazine-print to be read through the highlights, and would yield prints on printing-out paper in three or four minutes' exposure to sunlight.

Upon casual thought, therefore, it would seem to be quite a simple matter to make negatives of a quality suitable for enlargement; yet in addition to the foregoing general characteristics the ideal negative must be adapted to the worker's immediate requirements and facilities, because the intensity of the light employed, the degree of enlargement and the kind of developing-paper will each affect the result obtained from any given negative. In other words, the negatives best suited to give good enlargements with incandescent gas will differ somewhat from those best suited to an electric arc, and the choice between a great or a small enlargement and between gaslight or bromide paper constitutes similar differences worthy of consideration. Thus it may be said that the smaller the degree of enlargement, the stronger the light employed and the softer or more rapid the paper used, the stronger may be the negative; and conversely, that the greater the degree of enlargement, the weaker the light employed and the harder or slower the paper used, the weaker must be the negative.

Uniform negatives of the right quality render enlargement an easy and enjoyable matter; but unfortunately the average camerist does not appear to regard a uniform quality of negatives as of prime importance, because in contact-printing it is not absolutely necessary. Upon such slothful tendencies of human nature has been built the conclusion of many thinking camerists that perhaps photography in the ordinary sense of the term has become too simple for its own good. Certainly, the knowledge that there is a paper exactly suited to every printable negative greatly discounts the seeming importance of right exposure and development, even though common sense indicates that all negatives really satisfactory as to detail, gradation, strength and printing-quality must be the result of correct exposure and correct development.

For instance, in contact-work one has several processes to choose from, each of which differs somewhat in characteristic results. There are printing-out paper, platinum, self-toning and carbon in addition to the developing-papers. Of the latter the gaslight papers of certain brands are made in three grades of contrast — hard, medium and soft — with sometimes a still softer portrait-grade. And when it is remembered that each grade differs slightly in each manufacturer's brand, the possible range of quality obtainable in the print is seen to be almost unlimited. Then, too, soft effects of a somewhat different character may be had by the use of bromide papers in contact-printing. Thus the developing-papers alone meet every reasonable requirement.

The desire to enlarge, however, at once imposes limitations, although just recently the appearance of the enlarging-gaslight papers upon the market has filled a long-felt want — that of producing from miniature negatives enlargements of moderate size which possess the pleasing characteristics of contact gaslight prints such as moderate vigor, delightful gradation, detailful highlights and a general richness of tone so difficult to obtain on bromide paper. In other words, bromide paper is well suited to very large prints to be viewed at a distance, as when hung on the wall, whereas enlarging-gaslight paper is better suited to prints of moderate size, up to 8 x 10, to be viewed in the hand. Some brands of bromide paper are made in only one grade of contrast, others are made in hard and soft grades; but even so, and including the enlarging-gaslight papers, also in normal and soft grades, enlargement does not possess the latitude of contact-printing in its power to equalize the inequality of negatives.

To be sure, there are "dodges" in the use of bromide papers just as there are in all printing-processes. Chief among them is the application of a bichromate bath to prints from contrasty or badly yellowed negatives. As contrast in a negative is always increased in an enlargement, select a soft, rapid grade of bromide paper, give an exposure that will ensure highlights of correct depth and before development soak the exposed paper for three minutes in a solution containing 1 grain of potassium bichromate to each ounce of water. Then rinse in two changes of water and develop as usual, except for the use of only one-third the usual quantity of the reducing-agent, the other constituents of the developer remaining in their usual proportions. The strength of the bichromate solution may be reduced or increased to 4½ grains to each ounce of water, according to the character of the negative and the quality of the result desired. The use of a fresh acid fixing-bath tends to prevent staining when a bichromate bath has been resorted to. Should stains occur, however, they may be removed by soaking in a saturated solution of alum after thorough fixing and washing, and then again washing.

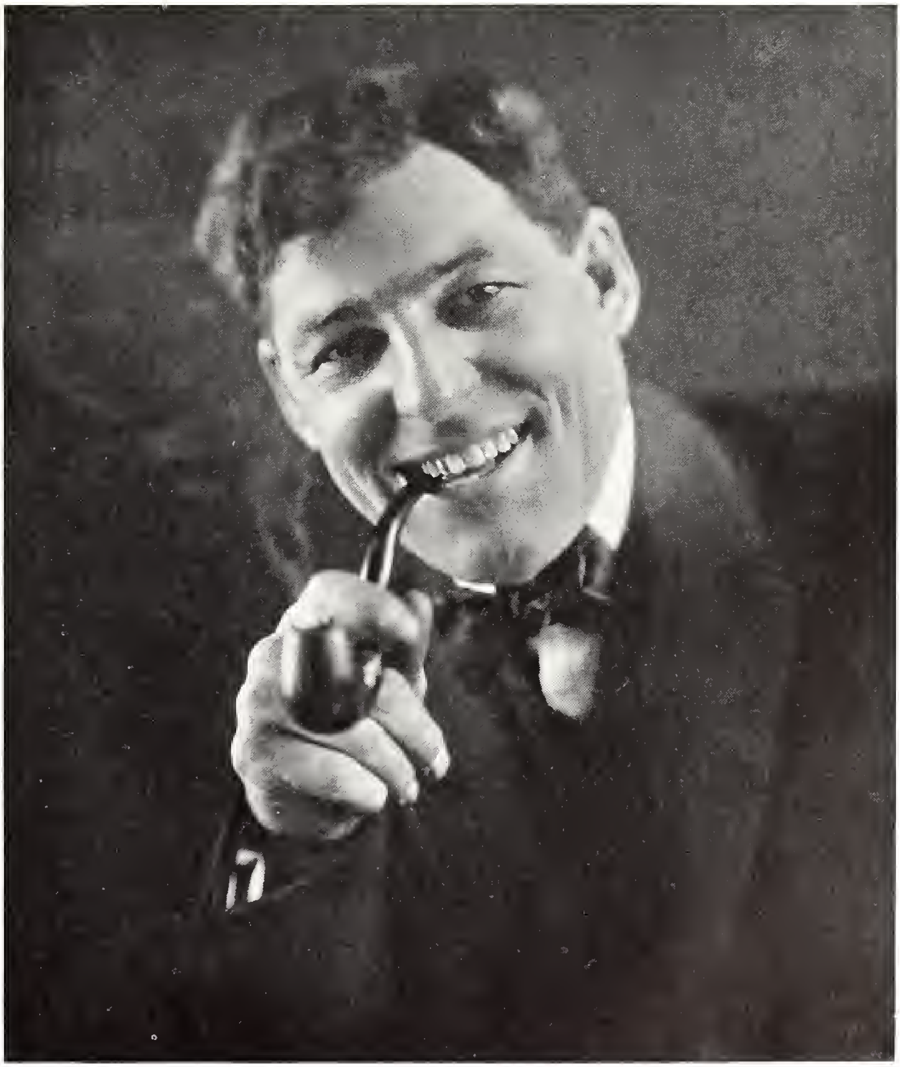
This scheme to obtain softer prints excels that of toning a harsh negative to a blue color, for to do so changes the negative permanently and renders control of the final result somewhat difficult.

When the desire is to increase contrast, a slow, hard bromide paper should be selected, or if the negative is very thin and the degree of enlargement not great, an enlarging-gaslight or even an ordinary gaslight paper. Should these direct measures fail, a pale green filter over the lens may help matters, as that color tends to increase contrast. A filter having a yellow tendency should be avoided, because it would prolong exposure to an impractical length of time. The well-known method of glycerine development, as in the case of platinum paper, may be resorted to when it is desired to hold back dark foreground-masses until clouds are developed to the full, or to restrain too dark far-away objects, that there may be a better effect of distance and separation of planes.

While these makeshift "dodges" take care of negatives not far from the ideal, the serious worker will prefer to have negatives of the right quality for enlargement on a suitable paper, thereby saving time, patience and materials. Two courses may be pursued. The first and less frequently practised is to make a second suitable negative from the first unsuitable one. Choose the process and grade of paper best adapted to yield a pleasing, smooth, black contact-print, whether it be gaslight, P.O.P., self-toning, carbon or bromide. Buff stock is permissible to soften the highlights, if necessary; but avoid red and brown tones. Of course a smooth, dead matte surface will yield a softer, flatter second negative than a brilliant ferrotyped glossy print. Any "dodges," such as shading, masking or double-printing, which will improve the subject, are carried out upon the contact-print, which is finally mounted absolutely smooth and flat, and then photographed, to produce another negative from which enlargements may be taken.

Obviously success depends upon the character of this second negative. Exposure must be correct, and also the duration of development. Experience is a good teacher, and although at first it may be necessary to make several trials the final results will be worth while. The most rational system is to adopt a standard tank-developer which works in a definite time at a given temperature, say 20 minutes at 65 degrees, so that all will be developed alike, and then double or halve successive exposures until the desired result is achieved. Constant use of the same illumination for copying, and a record of exposures for given subjects on a slow plate, say one in Class 3, Photo-Era Exposure-Guide, will soon establish a working-basis.

The second of the two courses to pursue consists in adopting one of the after-processes for modifying the initial negative, and in the majority of cases this is the simplest way to rectify the ordinary errors of exposure and development, for even with considerable care errors are occasionally made. It is not too much to say that nobody makes an absolutely correct exposure every time, and certainly many of us sometimes develop carelessly. For these troublesome subjects intensification must be resorted to when the negative is too thin, and reduction when it is too dense. Of the two, intensification is less satisfactory than reduction when printing by enlargement is the ultimate aim, and the possibilities of intensifying underexposures are very meager, indeed. Obviously, it is impossible to force out detail where none has been recorded by exposure, and as obviously it is more difficult to build up density when all silver excess has been



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A SYMPATHETIC LISTENER
GERHARD SISTERS

removed by fixation, and new metal must be supplied, than it is to remove an excess of metal already in the image. Also, intensification tends to enlarge the grain of the image somewhat, especially in the case of films, which is the very thing to be avoided whenever possible. The use of a medium or rough rather than a smooth matte paper for the final print, however, will mitigate the evil to a great extent when the degree of enlargement is considerable, for the grain of the negative becomes almost entirely lost in the texture of the paper.

There are several processes of both intensification and reduction, each yielding a characteristically different result. To determine which is best suited to the conditions, the individual needs of each negative must be considered. It is well to understand at the outset, though, that after-treatments must usually be regarded as makeshifts, and that the treated negative is seldom as satisfactory as one that was good in the first instance. Perfect negatives are obtainable only by correct exposure and correct development, and it is always better to make another negative; but when this is impossible very good results are usually had by the right treatment of under- and overdeveloped negatives as well as those overexposed, provided these errors have not been excessive.

To intensify a negative is to increase or "add to" its printing-density in order to obtain more brilliancy, more contrast, or more detail; it accomplishes what longer development would have accomplished in normal cases. The negative image is composed of particles of metallic silver, and the most direct course would seem to be to add more silver; but there are difficulties in doing this, among which may be mentioned the tendency of the silver salts, when used in this manner, to stain the gelatine film. Most intensification-methods combine the metallic silver of the image with another metal, thus forming a compound offering greater resistance to light than did the silver alone. The salts of mercury are used most because of their reliability of action. When a mercury solution is applied to a negative a double salt of silver and mercury is formed, producing an image that can be reduced virtually to a metallic state by abstracting the chlorine or iodine, as the case may be, with a suitable salt-solution or developer. In this way the silver of the original image is increased by nearly its weight of mercury.

Three classes of negatives may be benefited to a greater or less extent by intensification: (a) correct exposures underdeveloped; (b) overexposures underdeveloped; (c) and underexposures.

There is plenty of detail in a correct exposure that has been underdeveloped, unless development has been exceedingly short, but even then the detail is there if only it can be forced out. Such a negative would tend to yield a somewhat flat enlargement lacking the average degree of vigor. To improve it, soak the negative thoroughly in clean water to soften the film and ensure even action. Then treat it in the following solution, freshly prepared, using as many ounces as the size of the negative demands. Dissolve the sulphite first.

Water	1 ounce
Sodium sulphite, anhydrous	20 grains
Mercuric iodide	1 grain

Immerse the negative in this solution, and rock the tray to ensure uniform action. The image will gain steadily in strength for seven or eight minutes, and may be removed at any time when it has become brilliant enough. Wash in several changes of water, then in two baths of hydrochloric acid, half an ounce to five ounces of water, and finally in several more changes of water, with a swabbing off with a tuft of cotton. Now immerse in any ordinary alkaline developer containing sodium sulphite, such as pyro-soda. Here the image will usually change to a good black; but if not, allow it to remain about five minutes before washing and drying, which completes the process and prevents future yellowing. An examination now shows that the ratio of increase is the same for the shadows as for the highlights; the increased strength is in equal amount throughout the scale. When examining the quality of a negative, always hold it against a light screened through ground-glass or tissue-paper. It is impossible to judge accurately the degree of intensification or reduction by a naked light.

Because it was removed from the developer at an early stage as soon as fog began to appear, an overexposed and underdeveloped negative is weak, detailful and has scarcely any contrast whatever. Such a negative would tend to yield a weak, muddy enlargement. The shadows are good, but the highlights need to be built up, and this is done best by the following solution, the quantity prepared depending upon the size of the negative.

Water	1 ounce
Mercuric chloride	10 grains
Potassium bromide	10 grains

Bleach the negative in this solution until it looks like a white positive when examined from the back. This bleaching must be thorough on both front and back, and cannot be overdone

Then wash the negative in several changes of water, two acid baths, and finally in more water, exactly as was done in the previous process. Now place the negative in a ten-percent solution of sodium sulphite, where the image is seen rapidly to change to a good black, after which wash and dry it in the usual manner. An examination now shows that the stronger portions of the image have been considerably strengthened without a corresponding change in the middle-tones; the shadows have been affected hardly at all. Intensification was everywhere proportional to the initial density.

Upon enlargement an underexposed negative yields only solid black shadows without detail, the same as in a contact-print, and it will be benefited but little by intensification. It is impossible to bring out detail that does not exist. The only real remedy is to make another negative. If that is impossible, and the degree of underexposure is slight, the first process of intensification mentioned here may be of service. When there is no alternative, and it seems necessary to make the most of a bad case of underexposure, a silver intensifier will accomplish most; but it has a tendency to stain the gelatine, and the result is not always permanent. Prepare the following solution when needed; it does not keep.

Water	⅔ ounce
Silver nitrate	40 grains
Add	
Water	1 ounce
Ammonium sulphocyanide	80 grains
Above mixture	½ ounce
Hypo solution (1 to 4) just enough to dissolve the white precipitate	
Pyro (ten-percent solution with three ounces sodium sulphite to ten ounces of solution as a preservative)	30 minims
Ammonia (ten-percent solution)	50 minims

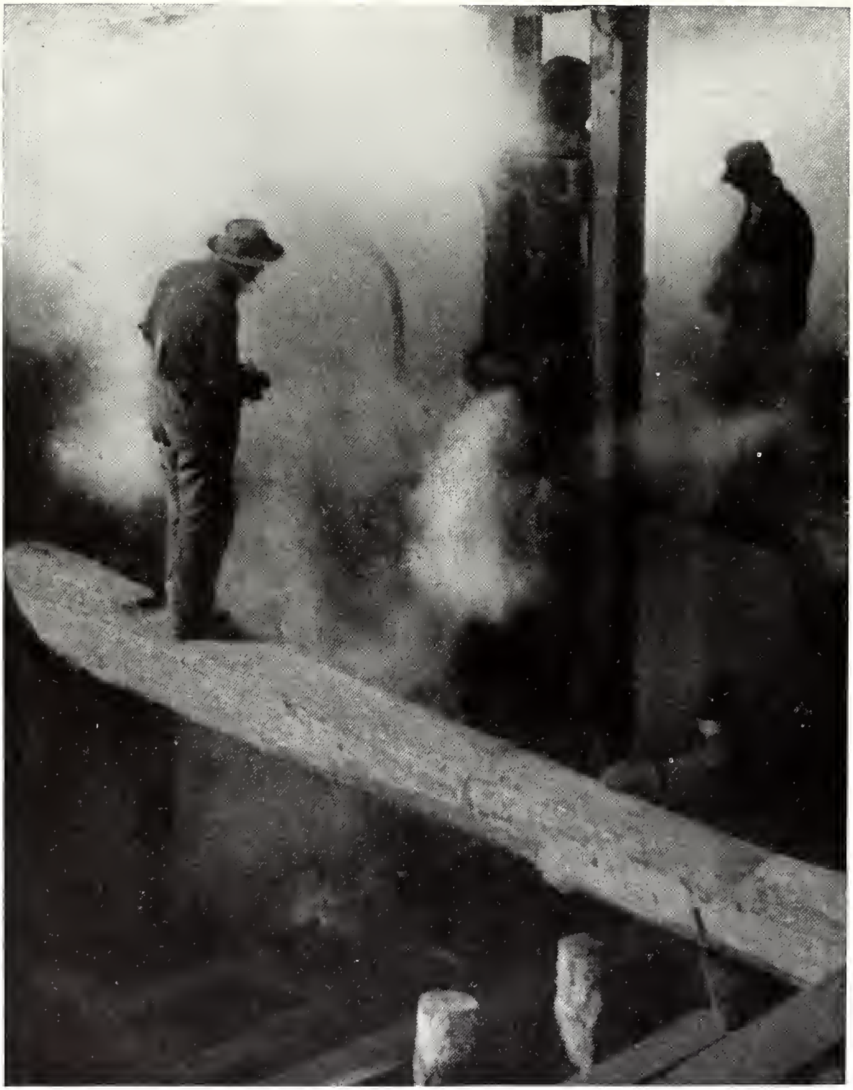
First harden the negative in an ordinary alum or formalin hardening-bath. Formalin one to sixty is good. After washing, immerse in the silver intensifier until sufficient or all possible density has been obtained. Finally, fix for two minutes in an ordinary hypo-bath, and wash and dry in the usual manner.

To reduce a negative is to lessen or "take away from" its printing-density in order to shorten the printing-time, or to obtain more harmonious gradation of values; it undoes some of the work accomplished by development. In reducing density of the highlights, harsh contrasts are rectified and detail is brought out from its hiding-place in excessive opacity. There are several chemicals that will remove a part of the metallic silver image, the action of each, happily, being somewhat different. This makes it possible to give the most beneficial treatment to three sorts of negatives: (a) correct exposures overdeveloped; (b) underexposures overdeveloped; (c) and overexposures fully developed.

Overdevelopment of a correct exposure yields a negative of great density and long printing-time; it has plenty of detail in the shadows, but the contrasts are harsh, depending in strength upon the degree of overdevelopment. Lessening the printing-time is the chief object when the contrasts are not much too great, and a reducer is desired that will act in a general way upon all portions of the image with approximate uniformity. The same is true of overexposures that have been fully developed regardless of great density in order to obtain enough contrast. The highlights of such negatives are rarely too strong, but the shadows are often fogged or veiled, and a reducer is needed that will attack the shadows without materially affecting the relative intensity of the highlights. Such negatives would necessitate a long exposure in the enlarger unless a powerful light and a very rapid, highly corrected, lens were available, those correctly exposed of course showing greater contrast than those overexposed.

Potassium ferricyanide and hypo, composing the well-known Farmer's reducer, are the most satisfactory salts to employ. In a bath containing these salts the metallic silver of the negative image is converted into a double-salt, silver ferrocyanide, which is soluble in the hypo and so readily washed out of the film. Prepare ten-percent stock-solutions of ferricyanide and hypo in separate bottles, storing the former in a dark place, because light affects it. Take enough of the hypo-solution to cover the negative when laid in a tray and then add the ferricyanide. It does not matter exactly how much is used, the result of a weak solution being the same as that of the shorter action of a stronger solution. Ten minims of the ferricyanide added to each ounce of the hypo-solution give a weak bath, and four or five times that may be used for strong action. After immersing the negative, rock the tray, to ensure uniform action, and examine the negative occasionally to judge the progress of the work. Upon sufficient reduction, wash the negative thoroughly and dry it as usual. Do not attempt to keep the used solution, as it spoils in a few minutes.

A different sort of reducer is needed for correct exposures greatly overdeveloped and for underexposures that have been forced in an attempt to bring out shadow-detail. Both classes of negatives would require long exposures in the enlarger, and both would yield only chalky high-



THE STEAM-RAM
GEORGE KRAUSE

lights and poor gradation, the contrast of the latter being greater than of the former because of the absence of much shadow-detail. In such cases the action of the reducer should be in proportion to the density of the image, attacking the highlights considerably and the shadows very little. With ammonium persulphate the highlights may lose half their strength, while the shadows remain almost unchanged.

The persulphate reducer contains fifteen grains to each ounce of water, and must be prepared freshly when wanted. After immersing the negative, rock the tray for uniformity of action. The increasing milkiness of the solution indicates that reduction is in progress. Upon sufficient reduction, rinse quickly and immerse the negative for exactly two minutes in a ten-percent solution of sodium sulphite, to stop further action, after which wash and dry the negative in the usual manner. If more convenient, a plain fixing-bath containing nothing but hypo and water may be used instead of the sulphite solution.

In combining slight intensification of the almost clear-glass shadows with great latitude in the reduction of the highlights of "soot and whitewash" negatives, redevelopment after bleaching with copper bromide far surpasses the wonderful selective action of the ammonium persulphate reducer. It also does much to mitigate halation because, unlike ammonium persulphate, it attacks chiefly that portion of the deposit nearest the glass rather than that nearest the surface. Indeed, the process has rightfully been termed "equalization."

The following bleaching-solution appears to keep indefinitely, and may be used repeatedly, until it ceases to act.

Water	1 ounce
Copper sulphate	5 grains
Potassium bromide	5 grains

Immerse the thoroughly fixed and washed negative — well-soaked if an old one — in this bleacher, and allow its action to continue until the highlights are white right through to the glass. Then wash fifteen minutes and redevelop in metol-hydroquinone, a used developer being slower in action and permitting greater control. The shadows will soon develop fully, the highlights requiring a longer time because of the greater thickness of the deposit. Therein lies the secret of "equalization," for it is possible to stop development at any stage, and thus control the density of the highlights. Usually redevelopment may continue safely until all but the highest lights are blackened over at the back. After a quick rinse and a short immersion in an ordinary hypo fixing-bath, wash and dry as usual. If the reduction has been too great, mercuric intensification is the remedy; and if it has been too little, the process may be repeated at once after the negative has been thoroughly washed to remove all traces of hypo.

Sometimes only a small portion of a negative requires reduction; an extreme highlight, perhaps, such as an opening to the sky through the trees. Local reduction is the remedy; but it requires skill, care and practice. Soak the negative in water for a few minutes and then prepare a weak ferricyanide reducer. With a tuft of cotton moistened in the reducer go over the dense area with a sweeping stroke and at once rinse the negative in water. Keep on applying reducer and washing it off as long as necessary. Of course, the action will be slow; but such a course prevents the formation of hard lines about the reduced area. Washing and drying are the same, and quite as important, as after reduction of the entire negative.

If failures occur either in intensification or reduction, or if after these processes negatives are irregularly stained, the cause may be ascribed to dirt or grease which has accumulated on the negative, or else to faulty development, fixation or washing when the negative was first made. Neglect of these processes always gives trouble in after-treatment. For the permanence of the negative, and also to ensure successful after-treatment, should that be desirable, it is a wise custom to avoid much coloring of the gelatine in development, to prevent surface staining by thorough rinsing between development and fixation, and to ensure complete fixation and washing. Great cleanliness is essential throughout the operations, especially trays free of the contaminating influences of other chemicals previously used in them which are likely to cause spots and stains of large area.

THE MASTERY *of the* WAYS TO DO THINGS *is the* ACCOMPLISHMENT THAT COUNTS FOR FUTURE WORK. — *Van Dyke.*

More About Pyro-Acetone

WILLIAM H. ZERBE

PHOTO-ERA for September contained an article by the writer entitled "Pyro-Acetone Developer as a Preventive of Halation," reproduced from *The American Annual of Photography* for 1915. The Editor and myself have received several letters in reference to this article wherein the correspondents state that they have not been successful in following the directions given.

The Editor has suggested that I supplement that article, and try to assist those readers who have had trouble to get better results. These are some of the failures as described in the letters:

(1) Negatives seem dense enough when taken out of the developer, but after removing them from the fixing-bath they are too thin and need intensification.

(2) Dealers did not have acetone and substituted acetonesulphite.

(3) Negatives after fixing are stained to such an extent that printing takes too long.

(4) Why is sodium metabisulphite used when other formulæ call for potassium?

(5) Will this developer work equally well with all makes of plates?

(6) Can you give me the proportions to be used for a 20-minute tank-developer at various temperatures?

(7) I have trouble in procuring acetone, dealers insisting that acetonesulphite is what I want. Where can I purchase the genuine article, as called for in the formula?

I will answer the questions in their order above:

(1) To those who understand what action each chemical has on the gelatine plate an answer would be unnecessary; but for the benefit of others who may not know I will say that sodium sulphite is the preserving-agent in this developer and nearly all others. Without it the developer would soon oxidize and decompose, thereby staining the negatives. Owing to variations in the water in different parts of the country, a formula may require more or less. The color of the negative should tell this, especially when pyro is used. If there is too much stain, add more sulphite, or use less if more color is desired. It is possible that the correspondent who had this trouble used crystal instead of anhydrous salt, which is only half the strength of the latter.

(2) In small towns one usually cannot find dealers who stock a full supply of chemicals, and it is possible that the dealer of whom this correspondent writes did not have acetone, or perhaps had never even heard of it, but it was no excuse for substituting something else. Acetone in a developer takes the place of sodium carbonate and is the accelerator. Acetonesulphite would have no effect on the plate, excepting as a preservative, for it is sometimes recommended in place of sodium sulphite. Perhaps if I had been a little more definite in writing out the formula in the original article this correspondent might not have had his trouble. I might have written liquid acetone instead of acetone. This is a clear liquid with a gaseous odor. As a rule small dealers do not carry it in stock, but should be able to get it to order. It might, however, be purchased direct of Chas. Cooper & Co., 194 Worth St., New York, or of The Mallinckrodt Chemical Co., 32 Platt St., New York, whose works I believe are located in St. Louis. It costs about 30 cents for 16 ounces.

AN OLD WAGON-ROAD WILLIAM LUDLUM, JR.

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EVANS MEMORIAL GALLERY, MUSEUM OF FINE ARTS, BOSTON BALDWIN COOLIDGE

(3) All plates lose density more or less in fixing. This, in my experience, is not the fault of the developer, but in the emulsion of the plate. The remedy in this case is to continue development a little longer — one or two trials ought to tell to what extent. I would not advise this correspondent to intensify his negatives until he has tried to make prints from them, for the principal point in favor of a pyro-acetone developed negative is its thinness in density, with a full scale of tones which can be retained in any printing-medium.

(4) The only reason why I used sodium metabisulphite was because I had a supply on hand and found that it worked satisfactorily.

(5) There is no reason why this developer will not work on all makes of plates. I use it even for making my positives for enlarged negatives, which are also developed in it. My positives and enlarged negatives are made on process plates, Orthonon, and sometimes on the extremely rapid plates, depending on what I am aiming for.

(6) To give a formula for a 20-minute tank-developer at various temperatures would require considerable experimenting, the time for which is not at my disposal. There is no reason why this correspondent could not obtain this information by trying the experiment for himself. He has simply to make several normal exposures, using a normal developer, but at a different temperature for each plate or set of plates, and note the time for a correctly developed negative. I do very little tank-developing, but have obtained excellent negatives with the following:

Water	27 ounces
Pyro stock-solution	1 ounce
Acetone solution	2 ounces

Develop from 20 to 30 minutes at 65 degrees, depending on the quality of negative desired.

I wish to remind my readers that it is possible but not at all desirable to get a dense negative with this developer. To give an idea how thin my own negatives are, I can lay any of them on a newspaper and read the printing through the densest part of the image, and they are suitable for printing with gaslight papers, platinum, gum or carbon; and for enlarging when one does not have a strong illuminant they are ideal, giving brilliant prints with the detail in the shadows and with the highlights not choked up.

I trust that the above suggestions will assist some of those readers who have thought well enough of my article to try the formula, and have not been entirely successful, to obtain better results. If they fail to do so it will be on account of my inability to explain it more comprehensively or their inability to grasp my meaning.

A System of Finding Exposures in Bromide Enlarging

ANKETELL HENDERSON

WITH the aid of a simple scale, which takes only a few minutes to make, a good candle and a small piece of colored glass, the measuring of the proper exposure for bromide enlargements is one of the simplest operations in photography.

Before making measurements, a unit of measurement must be adopted. Dr. Mees, in his valuable paper published in *The British Journal of Photography* for January 9, 1914, adopted the British and American candle-foot as the measurement of light-intensity, and it is a most convenient one.

It is well known that although the illumination of a surface which is given by a candle at a distance of 1 foot is 1 candle-foot, the illumination at 2 feet distance is only $\frac{1}{4}$ and at 3 feet is only $\frac{1}{9}$, the law being that the illumination decreases inversely as the square of the distance, so the first requisite of easy and quick measurement is a scale of inverse squares. This can be made in a few minutes on a wooden lath (such as a cloth-blind lath) or on the blank back of a linen tape-measure, and 3 feet 6 inches is long enough. At 1 foot from the zero-end mark 1, at 2 feet mark $\frac{1}{4}$ and at 3 feet $\frac{1}{9}$. Fill in intermediate divisions as follows: Mark 16 at 3 inches, 9 at 4 inches, 4 at 6 inches, and 2 at $8\frac{1}{2}$ inches.

For fractions of the unit mark $\frac{1}{2}$ at 17 inches, and $\frac{1}{3}$ at $20\frac{3}{4}$ inches, and $\frac{1}{5}$ at $26\frac{3}{4}$ inches and $\frac{1}{6}$ at $29\frac{3}{8}$ inches; also $\frac{1}{4}$ at 32 inches, and $\frac{1}{8}$ at 34 inches, and $\frac{1}{10}$ at 38 inches and $\frac{1}{12}$ at 42 inches.

A candle set at any mark will illuminate a screen set at zero, and on a white screen give a tone corresponding with that mark; and it is useful to learn to appreciate the tone-values given at the different distances. A candle set at the last ($\frac{1}{12}$) mark will give $\frac{1}{12}$ of a unit tone at the zero-end. We will use the scale first to ascertain the speed of the sensitive paper or plate we intend to use.

Speed of Paper

If we place a piece of this sensitive paper, say half a quarter-plate, in a printing-frame at the zero-end, and, by means of a card drawn along the front $\frac{1}{2}$ an inch at a time, expose it for 6 successive 2 seconds to a candle at the other end we obtain strips which have had exposures of 2, 4, 6, 8, 10, 12 seconds. The most exposed strip will receive 12/12 — equal to 1 unit of light for 1 second, and the others respectively $\frac{5}{6}$, $\frac{2}{3}$, $\frac{1}{2}$, $\frac{1}{3}$ and $\frac{1}{6}$ of a unit for 1 second.

On developing this paper in the usual developer for the average time it will show, if rapid enough, deposits of different densities, and the exposure at which the first well-marked deposit appears can be taken as the speed of that paper in candle-foot-seconds. For this speed I suggest the term "inertness." Practically $\frac{1}{12}$ of a second exposure at 1 unit distance may be taken as equivalent to 1 second exposure at the $\frac{1}{12}$ mark, and so on.

It is rare to find a bromide paper so slow as 1. The usual rapid paper is $\frac{1}{2}$ to $\frac{1}{3}$, and extra rapid may go to $\frac{1}{6}$ or $\frac{1}{8}$.

Should the paper-speed be known to be slow, better perform the operation at mark $\frac{1}{6}$ and give successive exposures of 3, 3, 2, 2, 2 seconds, which will correspond with speeds of 2, $1\frac{1}{2}$, 1, $\frac{2}{3}$, $\frac{1}{3}$ units. As experience is gained the exposures at mark $\frac{1}{12}$ can be made successively 3, 3, 2, 1, 1, 2, which will correspond with exposures $\frac{1}{6}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{3}{4}$ and 1 unit. This test of speed can be made, including development, in about 3 minutes.

It is a good practice to test a sample of all new papers bought, and indorse the speed or "inertness" on the packet or box. Remember that the speed of a paper diminishes with age after the packet is opened, and, in using an old paper, treat it as one of reduced speed.

Enlarging

When enlarging, we obtain, projected on the easel, an image of the negative in varying tones like those produced by a candle at different distances. The darkest of these tones, as a rule, should not produce a visible deposit on the sensitive paper or plate; the second darkest should produce a visible deposit. Having measured the speed of the paper, as just described, we proceed to measure, say, the darkest tone on the easel, and it is best to start with a very thin negative.

Hold a thin pencil or penholder about $\frac{1}{2}$ inch in front of the darkest tone on the easel, and it will cast a dark shadow on that portion. Now cast another shadow adjoining it by holding a lighted candle at one side of the enlarging-lantern. The first shadow will then be illuminated by the candle, and the second shadow will be illuminated by the darkest tone of the negative. Move the candle nearer to the easel, or farther away, until the two shadows are of equal intensity or tone, and measure with the scale from zero to candle.

With the thin negative this will generally be within the limits of the scale $\frac{1}{12}$, but with a dense negative the distance of the candle might be inconvenient and difficult, being excessive.

Another difficulty is that the color of the two shadows is generally different, the shadow illuminated by the candle being more yellow or brown than the other. Both difficulties are got rid of in the simplest way. Alter the color and reduce the light of the candle by interposing between it and the easel a light-blue glass, which will pass only a fraction (a good proportion is $\frac{1}{10}$) of the light. This will get rid of the color-difficulty and lessen the distance of the candle from the easel, and enable very dark tones to be measured.

If the blue glass passes $\frac{1}{10}$ of the light, the $\frac{1}{12}$ mark will become equal to $\frac{1}{120}$. The writer has a few old negatives for which he requires glasses as dark as $\frac{1}{20}$ or $\frac{1}{30}$, which makes the range of the scale $\frac{1}{240}$ and $\frac{1}{360}$.

Exposure for Enlargements

Supposing the darkest tone on the easel to be $\frac{1}{60}$ unit, and the speed of the sensitive paper $\frac{1}{3}$, the relationship of these two numbers will be 20, and 20 seconds' exposure for the enlargement will just give a marked deposit after development, provided that the actinic or chemical power of the lantern-light is the same as the candle used for testing the paper. Generally it is greater, but not so much greater as the difference in color would indicate, for much of its actinic power is absorbed by the condensor and lens. I find that a deduction of $\frac{1}{8}$ to $\frac{1}{10}$ of the calculated exposure, say from 20 to 18 units, suits my lantern, which has an inverted gas-mantle.

So far, we have assumed that we measure the darkest tone, and that a marked deposit is required in the enlargement to correspond with that tone. If white is required for that tone, we must measure the second darkest tone, or make a further allowance, such as a deduction of $\frac{1}{6}$ or $\frac{1}{5}$ from the calculated exposure for the darkest tone. One trial with an average negative will give confidence, and indicate the allowance to be made. These methods of measurement are not nearly so difficult as they read, and once mastered the only difficulty in enlarging is choosing or obtaining paper of the proper gradation to suit the negative — a thin negative generally requires a slow paper, and a dense negative a rapid paper.

To ascertain the value of the blue glass, set the candle with the blue glass at mark 2, and with pencil or penholder cast a shadow on a white screen at zero. Cast another shadow adjoining it by a similar candle without blue glass, and move this candle nearer to the screen, or further away, until the two shadows are of equal intensity or tone, and note the mark on the scale. Suppose the mark be $\frac{1}{5}$, the relationship of the marks will be 10, and the blue glass will transmit $\frac{1}{10}$ of the light. If the mark be 6, the relationship will be 12, and the blue glass will transmit $\frac{1}{12}$. Change the candles, and test again, and adopt the mean of the measurements. For darker blue glass set the candle with the blue glass at mark 4.

For testing the speed of papers in the printing-frame, a glass front is required, and it is an improvement to gum a strip of black paper about $\frac{1}{4}$ inch in width along the center. Discoloration behind this strip indicates that some, or more, restrainer in the developer is necessary with that paper. It is a still further improvement to make a printing-frame into a rough dark-slide (plate-holder) as follows: Along the two sides of the frame glue $\frac{1}{2}$-inch strips of thick card about $\frac{1}{10}$ of an inch thick and on these $\frac{1}{4}$-inch strips of the same thickness. Upon the latter strips the glass front will rest, and between them a thinner card will slide as a shutter. Rule lines $\frac{1}{2}$ inch apart on this shutter.

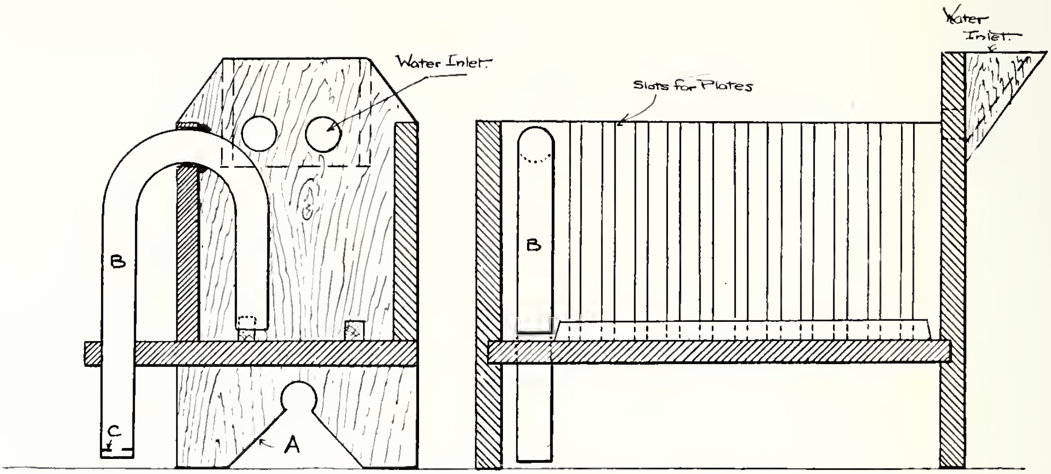
To hold the blue glass some form of lantern is convenient. A tin lantern for a candle will hold a quarter-plate of blue glass, and one of orange. The latter is useful in a developing-room.

As to candles, select a brand that gives a uniform flame. You need not go to the expense of standard candles. Small carriage-candles, 12 to the pound, give a uniform flame.

Lastly, you do not need to measure for every enlargement. You will soon get to appreciate the values of the various tones, and need only measure at the commencement of a batch, or for unusual negatives.

All bromide papers I have tested have sufficient latitude to give good results notwithstanding small variations in the light given by commercial candles.—*The British Journal of Photography.*

(The above abridgement of a paper recently read before the Victorian Photographic Association of Australia describes an easily worked photometric system of determining the exposure to be given in enlarging on bromide paper similar to that of Mr. Edward S. King, of Harvard Observatory, which was published in PHOTO-ERA for February, 1906. The system is based on the measurement of the intensity of the illumination of the projected image, and therefore is applicable equally to enlarging both by day and artificial light. At the reading of his paper Mr. Henderson demonstrated the use of the system by making enlargements successfully on unknown bromide paper from negatives he had not previously seen, and with a new untested enlarger.— ED.)



CONSTRUCTION-DRAWINGS OF THE PLATE-WASHER F. S. DELLENBAUGH, JR.

An Improved Automatic Plate-Washer

F. S. DELLENBAUGH, JR.

IN PHOTO-ERA for July, 1915, I noticed a description of an automatic plate-washer which changed the water by means of a little bucket that filled up when the plate-tank was full and opened a valve to let it empty.

There is a method of obtaining the same results in so much more simple a manner, which I have used quite successfully, that I thought perhaps some PHOTO-ERA readers might be interested, and the following description with the accompanying sketch I believe will make the operation perfectly clear.

A washing-box is made in the usual manner of wood, and painted with asphaltum varnish to make it waterproof. The ends should be left long so that the bottom of the box is two or three inches above the surface it stands upon; these legs being shown in the drawing at A. The sides are grooved to hold the plates in the usual manner, except that about an inch at one end is left clear for the discharge-pipe.

The principle of operation depends upon the well-known siphon, and a curved pipe, indicated at B in the drawing, is mounted in the clear space at one end of the box and passes through the side just below the top. The inner end must reach nearly to the bottom of the box, but leave enough opening so that the water can enter. The other end is carried down until it just clears the surface upon which the box rests.

The action is then as follows: As soon as the water has filled the box, some of it begins running down the pipe and starts the siphon. All the water is then drawn out through the pipe until some air gets in at the lower end, when it stops siphoning, and the box must fill again before it will repeat the action.

The speed with which the discharge takes place depends, of course, upon the difference between the heights of the two ends of the pipe and the size of the pipe. The farther the outside end hangs down the quicker it will empty the box.

A box large enough for 5 x 7 plates, with a capacity of twelve at a time, having a pipe half an inch in diameter, the lower end being two inches below the upper end, and the water running in from the faucet at about half the speed it discharges, will renew the water approximately every four and one-half minutes, or thirteen times per hour.

This is very simple, has no moving parts to get out of order, takes but very little more room than that necessary for the plates themselves, and is quite easy to build. The details of construction need not, of course, be followed out as shown in the drawing. Here the bottom of the tank is extended at one end to support the pipe, and the hole through the side of the tank is made a little larger than necessary, caulked with cotton which is well soaked with varnish, and makes a good tight joint so long as the supporting strain

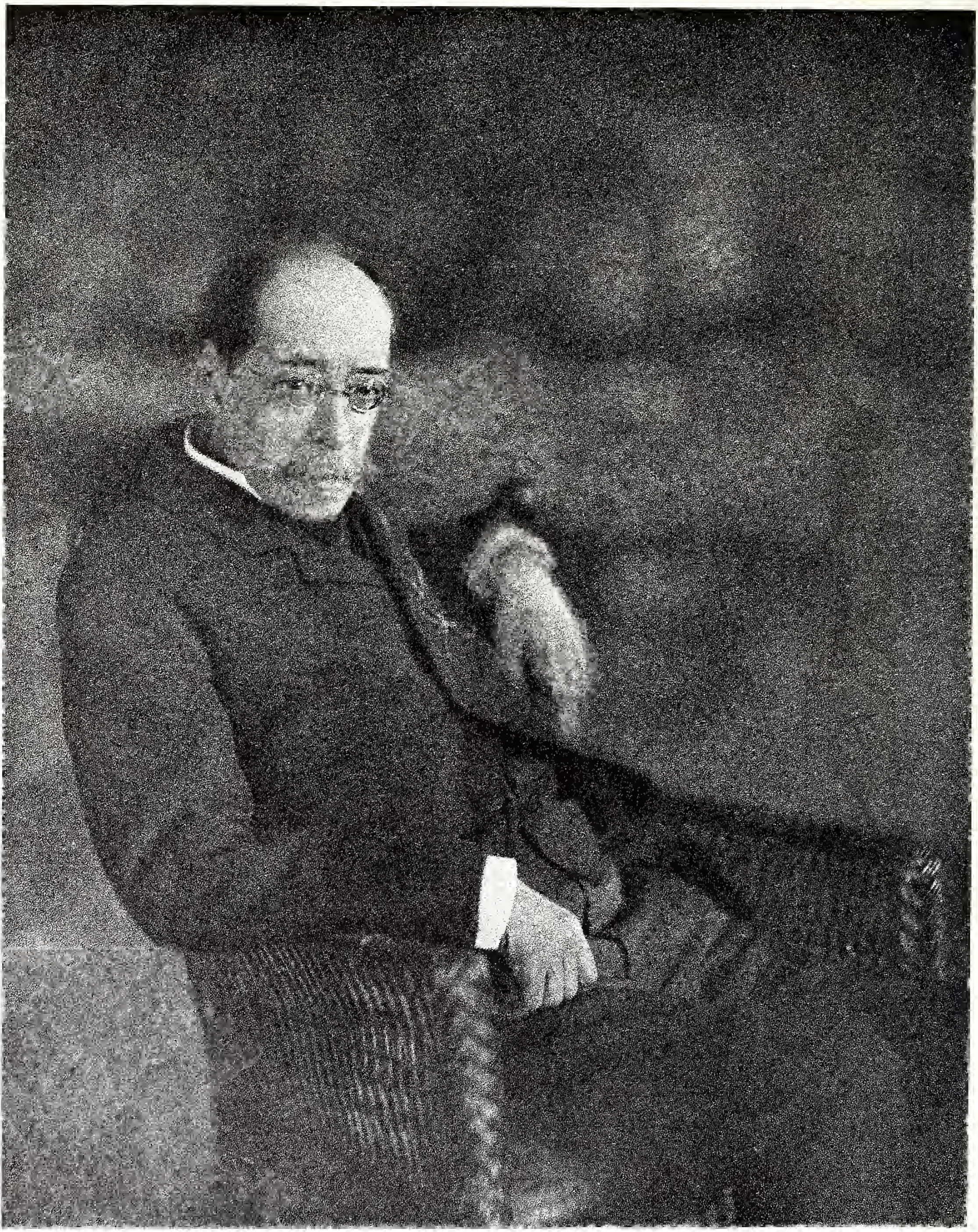
PORTRAIT M. FREY

is carried somewhere else. The best thing to make the pipe of is pure, or, as it is generally called, block tin, and it can usually be procured at any plumber's, is easy to bend to shape, and is not affected seriously by the small amount of hypo in the water.

It is a good plan to restrict the lower end of the pipe as shown at C, as the siphon will start more readily, and, of course, the faucet must not be allowed to pour into the tank too rapidly, for then the pipe will not carry away the water as fast as it comes in. However, a few trials will quickly show the proper rate, and it is easy enough to set it again by guess close enough to give good results. This home-made device has proved itself in actual service to be the best plate-washer I have ever tried, not excluding several of the commercial washers regularly on the market.

The Size of Enlargements

When the expression of an emotion is aimed at, the print should always be as large as the technique chosen will allow, for, although a small picture may be as esthetic, and as pleasing in line and tone as a larger one, the larger one is to be preferred when it is a question of subject, provided enlargement discloses no faults in composition. This is due, probably, to the fact that the area comprehended by the eye is so large that it is impossible to concentrate the vision on a small space to the exclusion of other objects, whereas at the same time the size of objects in the smaller picture is so far removed from that which we know to be true that it fails to convince us.—Paul Lewis Anderson, in *Pictorial Landscape-Photography*.

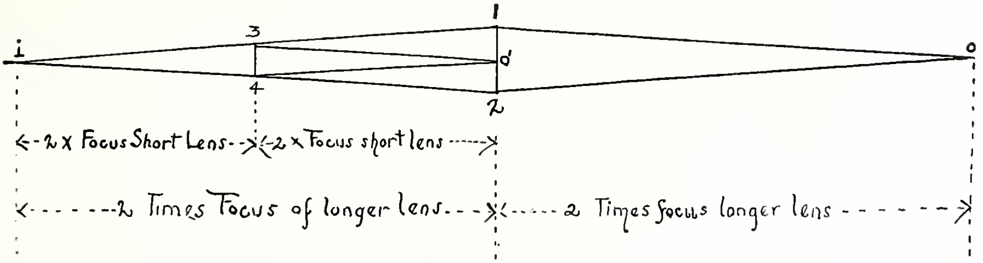


JOHN LA FARGE
ANONYMOUS

Depth of Focus

PHILIP CONKLIN

PROBABLY everything has been said on this subject; but my offering presents a view of the matter that I have never seen in print, and for which I paid something like $400 in the purchase of lenses, expecting them to do impossibilities. When active children are photographed standing, and an aperture of F/4 or larger is used, it is often a difficult matter to keep them at the correct distance from the camera. If they advance or retire a very little, the image is out of focus. I bought a 22-inch lens with an aperture of F/4, thinking to gain an advantage in this respect, because it seemed that the permissible movement forward or back would be in proportion to the focal length used. After numerous trials and considerable thought, I found that there was no gain as compared with the old lens of 14 inches and the same speed. Hence this article, which I hope will be of value.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Depth depends almost wholly on the size of the image.

The effect of diaphragming is so well known that for these comparisons I have decided to ignore it.

If lenses of various focal lengths be compared, and all diaphragmed to the same relative aperture — let us say F/8 — and the same-sized images of a given object drawn upon the ground-glass, they will all have the same depth.

An increase of focal length means a loss of depth only because the image is larger, and if the camera be removed further from the object and refocused, the depth is increased.

These last three paragraphs mean nearly the same thing and are intended to fix the first in your mind. That is the text — *Depth depends on the size of the image.* To prove this, a diagram is necessary, but not at all a technical one. And, by the way, many of the possibilities and limitations of lenses can be reasoned out with similar diagrams if they are drawn to scale.

We will compare two lenses, one of which has twice the focal length of the other, and under conditions where each is making an image the same size as the original. It must be assumed that we are dealing with a point in the object to be photographed — which I will designate uniformly as (o) — and it must be understood that it reflects rays of light in many directions, some of which strike the lens and are bent to meet at a point on the other side of the lens, to be called image or (i). When photographing to the scale suggested, the lens is midway between (o) and (i), and each is two focal lengths from the lens.

In the diagram, 1—2 represents the diaphragm of the longer-focus lens. Its diameter is $\frac{1}{8}$ the focal length, or $\frac{1}{16}$ the distance (o) to (i) or F/8. (i) is the point at which the rays cross. The depth is now absolutely determined by the size of this angle, and if a circle of diffusion of $\frac{1}{100}$ inch is allowed to be the limit, it is necessary to know only at what distance before and back of (i) these rays diverge $\frac{1}{100}$ of an inch. It is very obvious that if 1—2 were shortened, the lines would meet at a more acute angle and greater depth would ensue.

3—4 is one-half as long as 1—2, and represents the diameter of a lens of half the focal length of the first one. It is now necessary only to move (o) to (o′) and the same relative conditions will exist. The rays converge at the same angle and prove that depth depends on size of image and not on focal length. These comparisons will work out at all scales; at all apertures; at all focal lengths; and apply to all lenses from the cheapest upward. That is, as far as the center of the field is concerned. Of course, the corrected lenses — owing to their flatness of field — perform this same office with those (i's) which fall at the corners of the plate and the spectacle-lens "not quite." Long-focus lenses give better perspective, and are necessary to cover large plates.

I have found a practical application of this text in the making of groups. If the relative size of the image be accepted as of first importance, and reference made to the subjoined table, the necessary diaphragm can be determined to render sharp a group of any number of rows. Of course the actual depth in inches of the group can be estimated at a glance, or, if desired, roughly measured.

The arrangement is made with the relative sizes as indices, and it will give the total depth with any diaphragm at various scales; also the distance allowable in front and back of the plane of principal focus, allowing a circle of diffusion of $\frac{1}{100}$ inch to be the maximum. The distance from lens to plane of sharpest focus can be determined thus: Add 1 to the larger number of the scale at which the lens is working and multiply by the focal length. It ought to be useful, also, in commercial work, where often a diaphragm of such small size is used that focusing is difficult because of the lack of illumination.

1: 8

Front	Back	Total	Diap.
4	5	9	5.6
5	6	11	6.8
8	8	16	8.
9	10	19	11.
12	13	25	16.
18	20	38	22.
24	26	50	32.

1: 9

Front	Back	Total	Diap.
4	6	10	5.6
6	6	12	6.8
8	9	17	8.
11	12	23	11.
13	16	29	16.
22	24	46	22.
26	32	58	32.

1: 10

Front	Back	Total	Diap.
6	7	13	5.6
7	8	15	6.8
9	10	19	8.
13	14	27	11.
17	21	38	16.
24	30	54	22.
33	43	76	32.

1: 11

Front	Back	Total	Diap.
7	9	16	5.6
9	10	19	6.8
11	12	23	8.
14	18	32	11.
22	24	46	16.
28	36	64	22.

1: 12

Front	Back	Total	Diap.
9	10	19	5.6
11	12	23	6.8
13	14	27	8.
18	20	38	11.
25	30	55	16.
33	43	76	22.

1: 13

Front	Back	Total	Diap.
11	11	22	5.6
12	14	26	6.8
15	16	31	8.
20	24	44	11.
29	34	63	16.
39	49	88	22.

1: 14

Front	Back	Total	Diap.
11	14	25	5.6
14	16	30	6.8
17	19	36	8.
23	27	50	11.
32	41	73	16.
42	60	102	22.

1: 15

Front	Back	Total	Diap.
13	15	28	5.6
16	18	34	6.8
19	22	41	8.
25	32	57	11.
38	45	83	16.
50	64	114	22.

1: 16

Front	Back	Total	Diap.
14	18	32	5.6
18	20	38	6.8
22	25	47	8.
29	35	64	11.
41	53	94	16.
54	79	133	22.

1: 17

Front	Back	Total	Diap.
17	19	36	5.6
19	24	43	6.8
23	29	52	8.
31	41	72	11.
42	64	106	16.
60	84	144	22.

1: 18

Front	Back	Total	Diap.
18	22	40	5.6
22	26	48	6.8
27	31	58	8.
36	44	80	11.
50	68	118	16.
66	101	167	22.

Depth in inches (before and back of plane of principal focus) with any lens at any diaphragm, if used at the scales indicated. There are some apparent discrepancies of an inch or two, owing to the canceling of decimals, but they are of slight import

To avoid the recurring necessity of measuring the original and the image, and dividing the length of the former by that of the latter, a celluloid scale can easily be made and attached to the bed of the camera. The simplest way would be to cut strips of paper of lengths in inches to correspond with the larger numbers of the indices, and drawing up images of them one inch long and marking the extension of the bellows for each.

The focal length can be obtained by drawing up an image one-fifth the size of the original; measuring from the original over the lens and on to the ground-glass and dividing this distance by 7.2. The nodal point of the lens will then be six focal lengths from the original. I think this is the simplest way to obtain the focal length, and inasmuch as I have never seen it in print, an explanation will be forthcoming in a subsequent article on "The Practical Effect of Bellows-Extension On Exposure."

In closing, I will say that I have found a fairly reliable and very easy test for flatness. If the (o) be removed, let us say 20 focal lengths, and carefully focused near the center, and then the camera swung around until this image comes near the edge of the ground-glass, any loss of sharpness means a curved field. Do not expect a lens to cover a plate whose diagonal is much greater than the focal length of the lens.

English At-Home Portraits

WE are fond of saying, and some of us believing, that the British is the only nation which really understands and appreciates a home. Some languages have no equivalent word which absolutely expresses the feeling, and the general idea of home seems to refer to the family rather than to its permanent surroundings. If we grant this, we shall find it rather extraordinary that the American public is more inclined to have its homes photographed than we are. Possibly it is because it is easier to get such pictures made in the States than it is here, and that not only is there less bother but less expense incurred. A few days ago we happened to be present at an interview between a photographer and a prospective customer, and what we then heard made us think that English photographers who are not too artistic to undertake it have an almost unlimited quantity of work ready to their hand. The lady opened the proceedings by saying that she wanted ten to a dozen photographs made of her rooms and garden, as she was going on a trip to America and wished to show her friends what her home was like. The photographer was quite willing to do the work, and at once produced specimens from 10 x 12 plates mounted on large cards, at the same time quoting a price which could not be considered unreasonable, but which was much in excess of what an ordinary person would care to pay for a passing fancy. The pictures were pronounced to be not only too expensive but too large. The lady pointed out that even on small mounts 10 x 12 prints are not suitable for traveling, and said that in America a photographer would come around with a 5 x 7 camera and a flash-lamp, the latter to be used only when necessary, and take the negatives without making any fuss about it. The prints were mounted in a small, flexible album, and a very moderate price was charged. The order was not usually limited to one set, duplicates often being ordered for several members of the family. After some further talk it was arranged to take a series of small pictures; but we fear that neither of the parties was very well satisfied, the lady feeling that she was paying too much and the photographer doubting whether the job was worth the doing.

We regret to say that, in spite of all their versatility, photographers are very often slaves to habit. They have been in the habit of making interiors on 10 x 12 plates, and think that everybody ought to have that size and no other. After leaving the studio, we could not help thinking that, after all, if properly organized, a good deal of remunerative work could be carried out on the lines indicated by the lady, and the connection for studio-portraiture increased at the same time.

There are many points which make small interior work easier to do than larger sizes, and one very important one is the question of depth of field. The smaller the lens the greater the depth, a fact that is appreciated by all photographers when taking snapshots, but often forgotten when dealing with stand-exposures. This is very important for interior-work. To be profitable, short exposures must be the rule, and a 3$\frac{1}{2}$-inch lens working on a half-plate would give as good general definition as a 7$\frac{1}{2}$-inch lens on a 10 x 12 with about one-fourth the exposure. This is an important gain. An exposure of ten minutes instead of forty minutes is a consideration when, let us say, six negatives have to be made. In very badly lighted rooms or in winter it is often advisable to use flashlight; and here the larger aperture of the small lens is a distinct advantage, as it means less powder and consequently less smoke. It also makes possible the inclusion of figures in the photograph, no slight advantage when the purpose of the work is considered.

The mounting of the prints affords scope for individual taste; but anything of a heavy nature should be avoided. A small album of the loose-leaf type in which the prints are dry-mounted, showing a margin of a quarter to half an inch, would be very appropriate; or, for cheaper work, they might be printed on card-thickness paper and eyeletted into an art-paper cover with a silk-ribbon tie. This, however, may be left to the taste of the photographer.

When engaged in this class of work there is always an opportunity to obtain "At-Home" sittings on a larger scale; in fact, one of its great advantages is that it brings the photographer and sitter more intimately together, and, let us hope, to their mutual benefit. In country-districts, particularly, a photographer gains much by being allowed the run of the house, for he can then see many jobs which would slip past him for lack of a suggestion.

The British Journal of Photography.

* * *

UNQUESTIONABLY the best rule of all is to keep the eyes always wide open and observant of the things about you, for the most beautiful compositions in the world are always daring and unexpected arrangements of nature. It behooves us to see them.—*Birge Harrison.*

CLOUDLAND

KENNETH HARTLEY

EDITORIAL

Incongruous Backgrounds

WHEN one sees a portrait-photograph emanating from a high-class professional studio marred by a background representing a beautiful meadow or a range of hills, one hardly knows what to think. Does it suggest the artist's idea of consistency; is it mere carelessness, or the result of tactful acquiescence?

In treating this subject of incongruous backgrounds somewhat fully, in a previous issue, we pointed out that even the portrait-painters of old were guilty of this singular error; and what they did quite freely is considered good enough by the modern photographer to imitate. Oddly enough, amateur photographers cannot be charged with such violations of good taste. It may be because they make little or no use of scenic backgrounds. The professional retoucher who excels in etching artificial backgrounds on negatives generally commands a high salary, while the proprietor of the studio seems to care more for the business side of it than the criticism which those contradictory indoor-portraits may provoke.

We saw in a foreign exchange, not long ago, an illustrated advertisement of studio-backgrounds for amateurs, and the designs were largely of an *al fresco* character. Fortunately, there are many educated workers who know better than to use a background of a wood-interior in connection with an at-home portrait. A plain, neutral background is considered the safest to use in general portraiture. As to the professional, his own judgment will dictate to him the best course to pursue.

Unconvincing Genre-Pictures

ANOTHER winter-season is at hand, and with it the prospect of numerous camera-activities. Chief among these is indoor-photography — portraiture and genre. The latter specialty appeals to us particularly, at present, as a correspondent asks to know what constitutes a genre-picture, while another submits, for criticism, a number of faulty examples of genre-work.

First of all, a genre-subject may be described as one that tells a story — a child at play, a person reading or engaged in any serious or amusing occupation. A person costumed to suggest a character, or expressing an emotion like grief, joy, embarrassment, is also a suitable subject for a genre-picture. Hence, when a sitter is pictured in an exceedingly happy frame of mind, the result is a genre, not a portrait. One of the most common faults of a genre-picture in which the model is supposed to represent a certain character is the inconsistent or incomplete make-up. Who has not seen the little Dutch girl arrayed in a costume that barely suggests the nationality, and which taxed the imagination of the beholder to the utmost? Or the snub-nosed little boy costumed to typify an Indian, without regard to consistency or truth. Then there is the Greek maiden, in correct classic drapery, but the beautiful result marred by high-heeled slippers, present-day hair dress, or modern jewelry.

The remedy is simple enough. Correct examples of the various national costumes are easily obtainable through paintings, facsimile reproductions and photographs, which should be followed with scrupulous accuracy and in every detail. Improvised substitutes for certain parts will not do, unless pronounced satisfactory by one who knows. If the correct color of any part of the costume, or an accessory, be lacking, one that will approximate the corresponding color-value in the finished photograph should be chosen. The surroundings, too — furniture, pictures, draperies — should harmonize with the theme to be pictured. One need not be quite so fastidious, perhaps, in the case of living-pictures or a fancy-dress party; but in a photograph designed for a serious purpose, incongruities and anachronisms should be carefully avoided.

The Genius in the Studio

THAT the average pictorialist is not always competent to fill the shoes of the more practical studio-operator is a fact not generally known. We are familiar with cases where the esthetic picture-maker has produced but a few sittings instead of the large number that had been booked, with the result that the disgusted proprietor dismissed the dreamer and reinstated the practical, reliable operator and good average work. The usual complaint is that the work of salon-exhibitors is very uneven, about five percent of it being impressive, the rest uninspired. Bread-and-butter work would seem to outweigh the esthetic.

PHOTO-ERA MONTHLY COMPETITION

For Advanced Photographers

Closing the last day of every month. Address all prints to PHOTO-ERA, Monthly Competition, 383 Boylston Street, Boston, U. S. A.

Prizes

First Prize: Value $10.00.
Second Prize: Value $5.00.
Third Prize: Value $2.50.
Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

Prizes may be chosen by the winner, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in PHOTO-ERA, or in books. If preferred, the winner of a first prize may have a solid silver cup, of artistic design, suitably engraved.

Rules

1. This competition is free and open to any camerist desiring to enter.

2. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

3. *Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data.*

4. *Each print entered must bear the maker's name, address, the title of the picture and the name and month of the competition, and should be accompanied by a letter,* SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what competition it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA, unless otherwise requested by the contestant. If suitable, they will be published in PHOTO-ERA, full credit in each case being given to the maker.

6. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15, unless they are packed with *double thicknesses of* ***stiff*** *corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express very cheaply and with indemnity against loss.

7. The prints winning prizes or Honorable Mention in the twelve successive competitions of every year constitute a circulating collection which will be sent for public exhibition to camera-clubs, art-clubs and educational institutions throughout the country. The only charge is prepayment of expressage to the next destination on the route-list. This collection is every year of rare beauty and exceptional educational value. Persons interested to have one of these PHOTO-ERA prize-collections shown in their home-city will please communicate with the Editor of PHOTO-ERA.

Awards — Garden-Scenes

Closed October 31, 1915

First Prize: None awarded.
Second Prize: J. H. Field.
Third Prize: John E. Prior.
Honorable Mention: Fannie T. Cassidy, Alice F. Foster, Shoji Hirai, L. H. Jefferies, Carl H. Kattelmann, F. R. Smalley, Alice Willis.

Special commendation is due the following workers for meritorious prints: Fred C. Babcock, Carlos F. de Moya, John Govenlock Dickson, Mary E. B. Grunendike, T. W. Lindsell, James P. Martin, Alexander Murray, J. W. Newton, H. Pieter, John J. Reilly, Ford E. Samuel, Anson M. Titus, Elizabeth B. Wotkyns.

Subjects for Competition

"Winter Street-Scenes." Closes December 31.
"Night-Pictures." Closes January 31.
"American Scenic Beauties." Closes February 29.
"Home-Portraits." Closes March 31.
"Subject for PHOTO-ERA Cover." Closes April 30.
"Miscellaneous." Closes May 31.

Photo-Era Prize-Cup

IN deference to the wishes of prize-winners, the Publisher will give them the choice of photographic supplies to the full amount of the First Prize ($10.00), or a solid silver cup of artistic and original design, suitably inscribed, as shown in the accompanying illustration.

No Resemblance

A YOUNG lady friend once said to Mr. Sargent, the eminent artist: "I saw your latest photograph, and it was so like you that I kissed it!"

"Indeed!" said Mr. Sargent, smiling, "did it kiss you in return?"

"Goodness, no!" said the young lady.

"Ah, then it was not like me!" replied the artist.

Sacramento Bee.

Scenic Beauties of America — Photo-Era Competition

Closes February 29, 1916

Probably more people are "seeing America" this year than have ever done so before. Not only are the two fairs on the Pacific Coast drawing easterners across the continent, but the use of automobiles as means of transportation is enabling them to come closer to the intermediate country and to see it more intimately. The doors of Europe being shut to tourists has also been a large factor in increasing travel at home, and no doubt many a frequenter of European beauty-spots has been surprised to find in his own land scenery of equal beauty and grandeur. For the natural beauties of many lands and climes may be found epitomized in this cosmopolitan America of ours.

In our Rocky Mountain country may be found snow-capped mountains and wild, rugged scenery which holds its own well when compared with the finest Alpine views. Mont Blanc may be the "Monarch of Mountains," as Byron calls it, but Mount Ranier is more beautiful in form and lacks nothing in grandeur and majesty. I know of nothing else to compare with the wonders of our Yellowstone Park, and I suppose the Valley of the Yosemite is one of the most beautiful spots on the face of Mother Earth. For grandeur and gorgeousness of coloring, the Canyon of the Colorado is incomparable, and these are only a few of the most conspicuous beauty-spots.

Florida and the Southern states smile with the beauties of tropical scenery, whereas in Maine and other Northern states is found the primeval forest, and in winter the ice and snow of the Arctic. Through western New York, along the Erie Canal, may be found many reminders of "The Low Countries;" and New England, with her smiling hills and beautiful lakes, is reminiscent of Scotland and the English lake-country. As a waterfall, Niagara has only one rival, the Victoria Falls in Africa, and is one of the wonders of the natural world.

So an American camerist need have no regrets as far as natural scenery is concerned, though he is debarred from the gleaning of European fields for the present. When it comes to man's part in the landscape, that is a different story. The old walled towns, castles and cathedrals are not of the New World, and will not be of the Old World either if the war has its way with them! But these grand, impressive or unique sights are not the only "scenic beauties" of our land. Hardly a place but has its pictorial possibilities "would men observingly distil it out."

Indeed, the lesser grandeurs may quite possibly make more pleasing pictures than the greater ones, whose immensity puts them almost beyond the scope of an ordinary instrument. The glittering whiteness of a snow-capped peak against the blue sky is a joy to behold — but not an easy thing to photograph successfully; while the more accessible and less awe-inspiring summits of lesser ranges — like the White Mountains of New Hampshire — lend themselves much more gracefully to photographic purposes.

Little mountain-lakes reflecting the wooded slopes of the surrounding hills are always charming picture-material, and the cascades and waterfalls always associated with such scenes have wonderful pictorial possibilities, but require some technical skill to record their illusive charm. Sometimes one is so accommodating as to show its face and come leaping down the mountain-side in full sunshine; but they are far more often found deep in shade, and it then requires a very judicious adjustment of exposure to secure detail both in the white rushing water, with its rapid movement, and in the dark, wet rocks of its bed.

With a large fall like Niagara the clouds of spray are very troublesome, and in some conditions of weather and wind make a satisfactory view almost impossible. Carried by the wind it falls in a very good imitation of a hard shower, and a good drenching for self and camera is unavoidable. The lens must be kept covered until the moment of exposure, and carefully wiped afterward. It is no use to try exposures with the mist between you and the falls; but when the wind carries it away for a moment seize your opportunity.

A common failing is to attempt to include too much in one view. It is better to make several different exposures of interesting details of scenery than to seek to include "all the kingdoms of the world and the glories thereof" in one small picture. Taken at a distance, and with nothing to give it proper perspective, the mightiest mountain-range sinks into insignificance; while if taken at close range and from the proper viewpoint, a comparatively insignificant hill may be made to look quite imposing.

Distant hills are very disappointing to photograph, and even comparatively near ones seem to flatten out and not show for their true value. This is especially true when the viewpoint is high, as from a neighboring hill. It is much better to get down in the valley and let the hill "bulk large" in the view, using possibly some gnarled old tree as a balance, with a vista of distant hills between. To give an appearance of height, the horizon-line should be high. The top of the hill should come near the top of the picture-space. If the atmosphere is a little hazy the effect of distance and height is enhanced when the view is to be taken at close range, but the haziness will be much more apparent in the picture than in reality, and any distant view, however alluring it may look to the eye in its misty blueness, is almost sure to be entirely lost in the photograph. There is enough "atmosphere" on a normally clear day to give the distance a hazy softness and establish good plane-values. A ray-filter is an aid in bringing out far blue mountains, but it must not be too deep in color or those much-desired plane-values are lost.

River-scenery has always great possibilities pictorially. The lower Hudson, with the looming Palisades, reminiscent of the Rhine in certain sections, ought to yield better pictures than are often seen of it. The Mohawk flows through a charming valley, and the Connecticut is picturesque throughout its length. Our "King of Waters"— the Mississippi — is beautiful in certain sections, but almost too wide and with too flat a surrounding country to furnish much material for pictures throughout most of its course. The smaller and less well-known streams, the country over, are storehouses of fine picture-material throughout their sinuous length, waiting only for the discerning eye and ready lens. For throughout our land there is hardly a spot where something of beauty may not be found. Her mountainous portions furnish more varied and striking subjects, and her seacoasts abound in beautiful lines and rugged masses, yet even the level plains of the interiors have their possibilities in composition of simple lines and restful distances. In whatever section one abides, therefore, some of America's scenic beauties are not far from his door.

If, however, one is fortunate enough to be touring the country, the question of the best equipment will be a most important one. Unless stops are to be long and time and baggage unlimited, the decision will probably be against the plate-camera, with its greater weight and bulk. It has great advantages in many ways, but for such excursions its disadvantages rather outweigh them. Many of the small-sized cameras are good as far as they go, but unless one expects to enlarge everything they are rather inadequate. The one that seems to strike the happy "medium" is the postcard size. That is large enough to amount to something as it is, and with a good lens yields a negative that can be enlarged to good size satisfactorily if something specially worth while is obtained. On the other hand, it is not so large as to be unwieldy or heavy to carry. After all, though, it is not so much the equipment as the man behind it — the discerning eye that can select from a mass of confusing detail the one or two elements that will make a satisfactory composition and a pleasing picture.

Katherine Bingham.

Contrasty Prints From Weak Negatives

Too often a negative of which we had the greatest hope when the film was exposed proves on development to be one of those weak, thin, unprintable things that we would consign at once to the wastebasket were it not that the view is so attractive or hard to duplicate that we keep it — hoping to make something of it that will be passable.

Printed on the brand of paper that one ordinarily finds satisfactory, it is entirely hopeless, and we are inclined to throw it away in disgust; but there are other grades of paper, and some of them are "come to the kingdom for such a time as this." Regular Velox is one of these and Hard X Azo is another. If there is still something to be desired try a print on Blue-Label Cyko. Some one of them ought to suit the weakest of films, and it is astonishing to see what can be made of most unpromising material. A print will not infrequently show detail that is almost impossible to detect in the negative.

When the case is not sufficiently extreme to require such drastic measures, it is possible that simply a change in the light will be effective. Try doubling the distance between the light and your printing-frame, or if you are using daylight try artificial light. The working of this method may easily be observed by holding your film against a strong light and looking through it — then against a weak one; or hold it close to the source of light, then slowly back away and see the contrast increase. The reverse of this operation will, of course, help in getting good prints from plates too strong in contrast.

A similar result may be secured by covering the face of the printing-frame with one or more thicknesses of tissue-paper or by printing through ground-glass. Sometimes a blue glass is used for this purpose, but considerable experimenting should be done to determine length of exposure.

It is a great saving of paper if one sheet is cut into test-strips and the correct time determined by them before a full-sized print is made.

The addition of a drop or two of a saturated solution of potassium bromide will also increase contrast, but too much will give an olive tone to the prints, which is most objectionable to some persons. No potassium iodide is allowable in a developer for weak prints, as it lessens contrast somewhat, and that is to be avoided.

Katherine Bingham.

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It would be heresy not to be enthusiastic about the old masters; yet one may not hesitate to turn from them to the most recent works.—*David de La Gamme.*

Disguising the Effect of Retouching When Enlarging

Although many amateur photographers are capable of retouching their negatives with sufficient skill to disguise the pencil-marks when making contact-prints, there are not many who are sufficiently expert to hide the scratchy effect that becomes painfully obvious when enlarging with an artificial-light enlarger, particularly if the enlarger has a small point of illumination, such as an arc-light or limelight. The presence of ground-glass between the light and the condensor does not make any appreciable difference if the light is powerful, and every touch of the pencil or spotting-brush becomes an exaggerated defect in the enlarged print. Three methods are suggested whereby this fault can be overcome. The first is by using the full aperture of the lens and throwing the image very slightly out of focus. Many subjects, particularly portraits, are greatly improved by this method, especially if a rough matte-surface paper is used. The second method is to focus sharply; but, for at least one-half of the exposure, hold a piece of bolting-silk in front of the lens. This produces a softening-effect that is not so aggressive as when bolting-silk is used during the entire exposure. A third method is to use a piece of netting of a larger mesh than bolting-silk or two or three thicknesses of black "tulle." These can be held in front of the lens during the entire exposure, and effect a remarkable improvement in the printing-quality.

The Amateur Photographer.

Photographs of a Volcano Crater

The interesting collection of photographs of the crater of Kilauea volcano, Hawaii, which has recently been made from kites by J. F. Haworth and Louis Meese, are to be placed in the hands of G. Carroll Curtis as a guide in making a model of the crater for the museum at Harvard University.

A Unique Film for Color-Photography

Percy B. Brewster, of Orange, N. J., has taken out a patent on a film that is to be coated on both sides, one side being sensitive to a group of colors from violet to green, or yellow-green, or even yellow, and the other side being sensitive to red, orange and yellow.

Belgium to Live Again in Photographs

Unfortunate Belgium has long been a favorite haunt of tourist-photographers. Not only were its landscapes of exceptionally picturesque charm, but its architecture was among the most notable in Europe, and has provided inspiration for some of the best modern ecclesiastical work in England and America. This latter fact has roused the Royal Institute of British Architects to the importance and desirability of gathering the best and most complete possible collection of photographs, drawings, etc., of buildings in Belgium. Many of them have been partially or entirely destroyed by the ravages of war, and others may yet have to go. It is highly desirable, therefore, that buildings of note that are still intact be included as contributing toward a comprehensive and permanent record of Belgian architecture. In addition to the well-known professional collections of negatives, many amateur camerists have in their possession unique viewpoints and stray details of great value which ought to be included. All having anything to contribute to this laudable movement should address the Honorable Secretary of the Institute, at 9 Conduit St., London, W., England.

SECOND PRIZE
GARDEN-SCENES

IN THE GARDEN J. H. FIELD

Enlarging Without Condensors

Undoubtedly this provides one of the most prolific subjects in photography, and one in which there is widespread interest. So many queries have been received of late regarding this type of home-made apparatus that we publish the appended list of articles which have appeared in recent issues of Photo-Era: "Enlarging with a Box-Camera," Lehman Wendell, March, 1913; "Enlarging with a Fixed-Focus Enlarger," Phil M. Riley, August, 1914; "A Simple Device for Making Enlargements," R. W. Dodson, December, 1914; "A Parabolic Reflecting- and Enlarging-Lamp," F. A. Fahrenwald, February, 1915; "A Home-Made Copying- and Enlarging-Camera," James Thomson, May, 1915; "An Enlarger for the V. P. Kodak," F. W. Bassett, September, 1915. Copies of these issues may be had for 25 cents each, postpaid.

* * *

The dentist of humorous disposition getting even with his photographer — "Look pleasant, please."

Tatler.

Photo-Era for November

Santa Clara, Cal., November 3, 1915.

Dear Mr. French:

Photo-Era for November is truly a notable issue among a long record of your magazine's successes, photographic and literary.

Will you kindly accept my congratulations upon what you are pleased to call your sketch of Daguerre. I, one of many, am delighted with it, as it portrays so sympathetically, and with clear, facile touch, the achievements of the renowned artist-inventor.

We are all indebted to you for adherence to high standards, and your devotion in upholding all that is worthy and true in the noble science of photography.

I tender you my very sincere thanks for your handsome acknowledgment of my humble effort, which you have supported in the finest possible way. You get away strongly, at the first flash, with a great heart — a splendid example for all those interested in photography to follow.

Cordially yours,
(Signed) Claud H. Simson.

THE CRUCIBLE

A MONTHLY DIGEST OF PRACTICAL FACTS FOR PHOTOGRAPHIC WORKERS

With Reviews of Foreign Magazines, Progress and Investigation

Edited by PHIL M. RILEY

Readers are encouraged to contribute their favorite methods for publication in this department
Address all such communications to The Crucible, PHOTO-ERA, 383 Boylston Street, Boston, U. S. A.

Scratched Negatives

Minute scratches and irregularities on the celluloid of film negatives, which are apt to show in an exaggerated form when an enlargement is being made, can be removed in the following way: The negative is put on a smooth, flat surface, gelatine side downwards, and being securely held with the outspread fingers of the left hand, a piece of absorbent cotton with a few drops of methylated spirit on it is held in the right, and the surface is given a good polishing all over with it. This will be found to leave it quite smooth and glossy. I have treated many negatives in this way, and have not had a failure. Of course the film must not be allowed to slip and ruck up or the negative would be ruined, as it would be very difficult to get it quite flat again. The other side of the film can be treated in the same way should it be necessary; but in this case the rubbing, if carried on too far, will end in reducing the parts rubbed.

E. Glaser, in *Photography and Focus.*

Process for Producing Colored Photographs by Means of Superimposed Colored Coatings

German Empire patent No. 286,657, issued to Max Holfert, of Warnsdorff, Bohemia (published August 25, 1915), covers a process for producing colored photographs on paper by printing the separate colors over one another on one and the same halogen-silver emulsion of uniform light-sensitiveness. A diapositive is made from the red negative on a sheet of halogen-silver colloid, and this is changed in the usual way to the blue part of the picture. On this sheet a second sheet is fixed and printed through the blue negative, and then changed to the yellow part. On this a third sheet is printed from the green negative for the red portion of the picture.

Removing Backing

In certain cases, especially when the backing readily mixes with the developer, a very thin layer of the backing-material adheres closely to the gelatine of the plate and is not removed by the process of washing. I have seen one or two delicate negatives ruined by this layer of backing. If the plate is simply washed and allowed to dry, this layer dries also and is not easily removed; but most of it can be got rid of by gently rubbing with absorbent cotton moistened with methylated spirit. If a reddish backing has been used the quantity of color which comes off is rather surprising. The best way of removing the backing is to do it after the plate comes from the last washing-water, giving the surface a good swabbing with absorbent cotton while holding it under the tap. Every part of the surface must be swabbed, otherwise streaks will be formed, and the result will be worse than if the plate had not been swabbed at all.

Chas. J. R. Tipper, B.Sc., in *Photography and Focus.*

Doctoring Sulphide-Toned Enlargements

In cases where an enlargement which has been sulphide-toned is finally too dark or of an unpleasant color, it is worth while, before making another, to see whether it cannot be improved by one or other of two simple methods which I have frequently found of service in this connection. In the case of contact-prints the easiest thing undoubtedly is to make another print. But for a large print which is a little too dark, wash for a few minutes after sulphiding and then place again for about five minutes in the bleaching-bath, again washing and putting back again into the sulphide. This treatment will oftentimes reduce the depth of the image slightly, and at the same time yield a distinctly warmer tone. If the print is decidedly too dark, I treat it with a solution of copper chloride kept for the purpose. This mixture is made by mixing equal parts of 5-percent copper chloride solution and 15-percent sodium chloride (common salt). The print is treated in this mixture for a minute or so (longer if much too dark), then washed for five minutes in running water, and placed for about two minutes in a bath of 5-percent nitric acid. It is again washed for five minutes, and finally placed back again in the sulphide bath. Often this treatment will change a bad tone to one of a warm rich brown color.— *The British Journal of Photography.*

Stains on the Hands

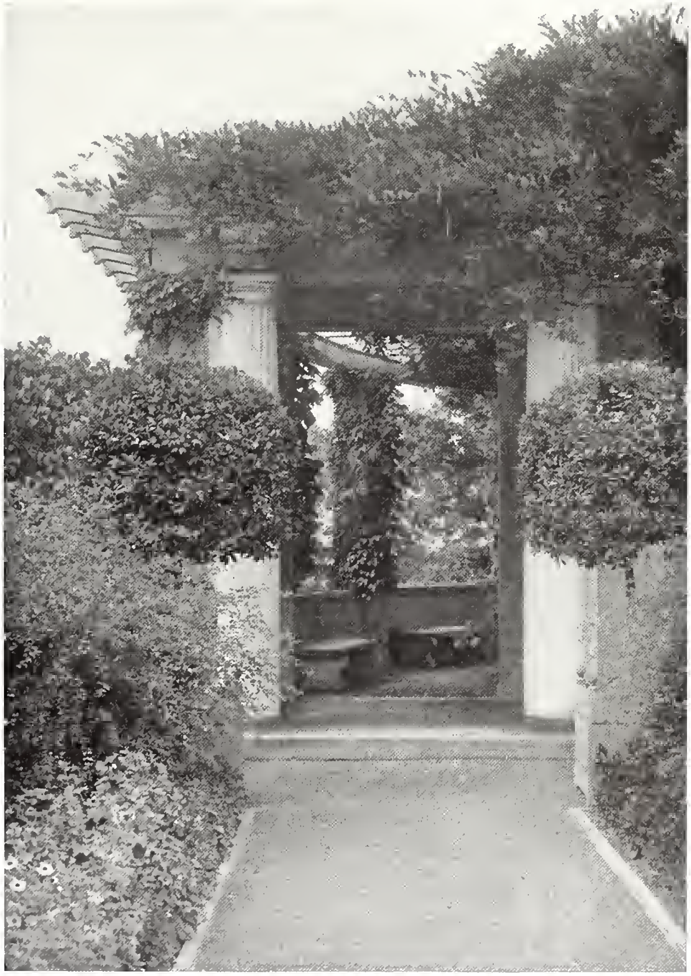
Any reducing-solution which can be applied to a negative can also be used for removing silver-stains from the hands. Ferricyanide and hypo, therefore, serve this purpose, as does the bleaching-solution used in sulphide toning, if it is followed up by hypo. Another powerful solvent of silver is a solution of potassium permanganate acidified with a few drops of sulphuric acid. If the permanganate is too strong, it is itself a staining-agent; permanganate-stains are removed in a moment by a weak solution of oxalic acid. The commonest stains in photography are those caused by oxidized developers; and they are very difficult to remove from the skin, especially if once allowed to get dry. Weak sulphurous acid is the best application for the purpose, a suitable solution being made by adding a little acid — citric, hydrochloric or sulphuric, for example — to a solution of sodium sulphite.

Photography and Focus.

If I Were a Photographer

I would distribute cards shaped like photographic mounts. In each one would be pasted, instead of a picture, a mirror; and under the mirror this text would appear: "Bring the good-looking picture you find in this glass into our shop, and we will exchange it for twelve identical copies — just as good, if not better — for twenty-five cents apiece."— E. S. Brandt in *System.*

THIRD PRIZE
GARDEN-SCENES



THE PERGOLA JOHN E. PRIOR

Increasing the Brilliance of Bromide Prints by Rapid Drying

When dried in the usual way, bromide prints lose, after a short time, considerable of the brilliance they possess while in a moist state. To remedy this the practice has been to apply a thin varnish. This varnishing, however, is superfluous if the prints are dried rapidly with heat. This can be done by holding the print over a spirit or gas flame or close to a stove or radiator. The quicker the drying is done the more brilliant will be the print. Prints that have a dry and sunken appearance may have their brilliance improved by soaking in water for a short time and treating as above.

Two Air-Brush Tips

In order to prevent the tubes from blowing off and also from breaking, due to continuous bending at a sharp angle where connected with the air-reservoir, bore a good size cork so that the tube will only just pass through the hole. Put the tube over the nipple on the reservoir in the ordinary way and push the cork on over it. This will prevent it from blowing off. Now, to prevent the tube from breaking, procure the spring from an old spring-roller blind, cut off a length of about six inches, and put the tube through this spring, fixing it by pressing over the cork. This prevents any sharp bend of the tube and consequently much anguish of soul. Doubtless any other spring would answer, but the spring-roller variety is particularly light and flexible.

It is often found that when watercolor which has once dried on the palette is again moistened with a view to using in the air-brush, the particles of color leave the palette before they are dissolved, forming solid lumps which at once clog the air-brush. One obvious remedy for this, of course, is always to use fresh color, but in the case of certain colors in continual use, such as sepia, this is very wasteful both of time and of paint, and a more satisfactory way is to add a very small quantity, one or two drops only, of glycerine to the color, which should be mixed in a small saucer. This will prevent it from becoming absolutely dry, but will not in the least retard its drying on the prints.

The British Journal of Photography.

HONORABLE
MENTION
GARDEN-SCENES

REFLECTIONS SHOJI HIRAI

The Eyes in Home-Portraiture

The many portraits that pass through this office for criticism and as entries in the two monthly competitions conducted by Photo-Era seem to indicate that many of the contestants do not realize the importance of the eyes in this subject. Naturally more liberties are permissible and necessary in genre-work, but in portraiture either the eyes must look directly into the lens of the camera or else be turned in the same direction as the head — somewhat more than the head if desired. To turn the head one way and the eyes another invariably gives to almost any face a crafty expression valuable in character-impersonation but rarely desired in a portrait-likeness. Invariably when the eyes are to be turned upward the head should also be so turned, to avoid showing too much of the white of the eyes.

All persons do not have equally good eyes for photographic rendering, nor are both eyes always alike, and these faults can be concealed very cleverly by judicious treatment in posing. For instance, the undue prominence of protruding eyes with long, dark eyelashes may be mitigated by turning the eyes downward somewhat. When the eyes are of unequal size, or not opened to the same degree, do not attempt a full-face portrait, but rather turn the head so that the larger eye will be the farther away of the two. Intelligent thought along these lines will do much to improve the portraiture of abnormal countenances. As a last resort in extreme cases clever retouching and etching may be resorted to, but it must be done with the utmost caution and skill, for eyes, as the poets truly write, are the "windows of the soul," and so may not be tampered with lightly.

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One never invents anything, one only repeats; but one may marvelously improve.—*Auguste Luchet.*

Mounting Prints for the Showcase

Here is a "dodge" that will interest photographers and amateurs immensely. This idea is original, and I discovered it one day by accident when a large 14 x 17 print stuck to the film side of the negative on which I had laid it. I thought the print was ruined; instead, it was the most beautiful one in the lot, and I have been using this method since for display-work.

Professional photographers especially have a great deal of trouble to keep prints from buckling in the showcase and in frames where they are exposed to the sun. Pictures mounted in this way can be framed without glass. The prints may be on either single- or heavy-weight paper. When printed on a matte-surface paper, they have the soft velvety appearance of carbons.

Take any old or rejected negative, being sure that it has been thoroughly fixed and washed; cut to the size required; soak a few minutes in water and blot off the surface-water. Paste the print and mount carefully on the film side of the negative, just as you would on cardboard. Cover with blotters, and weight for an hour or two until the paste is set. Put in a cool place to finish drying. Prints adhere better to the gelatine than to the plain glass surface.

Freeport, Ill. C. E. Wilkins.

To Our New Subscribers

During the summer and autumn several hundred new subscribers have been added to our list. Many of them may not be aware that the numbers preceding the issue with which they started their subscription are fully as interesting and valuable, and it might be well to have the files of the year 1915 complete. We should advise such subscribers to send at once for the remaining numbers before they are our of print. They will be sent, at 15 cents each, postpaid, as long as they last.

THE ROUND ROBIN GUILD

An Association of Beginners in Photography

Conducted by KATHERINE BINGHAM

This association, conducted under the auspices of PHOTO-ERA, and of which PHOTO-ERA is the official organ, is intended primarily for the benefit of beginners in photography. The aim of the association is to assist photographers by giving them information, advice and criticism in the Guild pages of PHOTO-ERA and by personal correspondence. Membership is free to subscribers and regular purchasers of the magazine sending name and address to PHOTO-ERA, The Round Robin Guild, 383 Boylston Street, Boston, U. S. A.

Improving a Landscape-Negative

We do not demand perfection in our portrait-negatives, but expect to resort to retouching to repair defects. Our landscape-negatives, however, we are too prone to accept as they are, defects and all, and print from them "regardless." Now there is seldom a plate that could not be improved by a little thought and effort. If a test-print is made and carefully studied many things will be discovered that we wish otherwise than as they appear. Perhaps a branch was moved by the wind and is blurred, or there may be a telephone-pole and wires across the foreground; some shadow may be too heavy, or some light too strong, or any one of a thousand defects may be present. It remains, having located the trouble, to see what can be done to remedy it in the negative or print.

If there is a large area that prints too light, chemical reduction should be the first operation. The old standby — Farmer's reducer — is as good as any for this purpose. If the area is large and indefinite in shape — as a sky with broken horizon — the negative should be wet and the reducer flowed with a brush over the section to be reduced. If the dense area is small and definite in shape, as a window, or a white dress, the plate should have the water blotted from the surface after soaking, and a small brush used, being careful not to run over the outline. The plate should be rinsed frequently, but each time the water must be blotted from the surface before continuing the work.

Many times, however, the too strong lights will be too small to admit of this treatment, and it is not practical for the removal of undesirable objects. For this purpose the knife must be resorted to. An old discarded plate should be experimented on before the knife is used on a valuable plate, as some little skill and experience are necessary. The knife must be very sharp and the touch light, that the film be not entirely removed. A little experimenting will soon show what is needed. Any work with the knife should be done first, and followed by the pencil.

Supposing the object to be removed is a telephone-pole, the side toward the light will probably be lighter than objects back of it, and the shadow side will be darker. The first thing to do, then, is to scrape down the too dense side carefully until it matches the density of the background, being careful to match each change of shade that occurs there. This having been done, rub the negative with some good retouching-medium, and with a rather soft but very sharp pencil work up the shadow side and any unevenness in the etching until the pole has entirely disappeared. Care must be taken to match the objects seen behind the pole — not to make the pole an even tint. A fence must continue its course unbroken by the supposedly vanished pole, likewise any line of shadow or other change of density. When it is a matter of a moved branch, or other change in foliage-form, both knife and pencil will have to be resorted to. The general shape can be determined by the surrounding branches of similar form, and the shape of leaves etched with the knife, leaving the pencil to obliterate any blurr of shadow and cover any defects in the etching.

But it is not only in the removal of defects that these methods may be used. They also serve to improve the composition by strengthening certain desirable details and subduing less pleasing ones. Perhaps the picture is supposed to show a path through the woods, but the path does not stand out with sufficient prominence, and the effect is lost. The knife may be used to deepen the shadow along the side, but for strengthening so large an area as the path a better method than the use of the pencil is to use oil-paint on the back of the plate. A combination of flake white, ivory black and a little raw sienna makes a good medium. It should be applied with a brush in "dabs," and then worked thin with a piece of velvet over the finger-tip. It should be carefully spread over the places where needed, and the edges blended off with the velvet. When it appears to have the desired density, a trial-print should be made at once, when it would not be surprising if the effect was found to be overdone. In that case, while the paint is still moist, it can be thinned down still more, and worked upon until a test-print shows that the desired result has been attained. The plate should then be thoroughly dry before handling, as a careless finger might necessitate the doing over of the whole.

The common fault of a "baldheaded sky" may be remedied in this fashion. If the sky prints white it must first be reduced, so that the work done upon it will print out. Then carefully work in from the back a broken sky, being sure that your clouds are lighted from the same side as your landscape, and keeping them simple and unobtrusive. The lights and shadows in foliage may be strengthened, or a blank foreground relieved, by judicious additions of grasses, or even flowers, if the work is not too literal and microscopic.

Another method to produce similar results is to flow the back of the plate with ground-glass substitute, and then scrape it away when shadows are to be strengthened, and work up the highlights with pencil-filings and a crayon-stump. By some of these means almost any plate may be in some manner improved and brought to yield more nearly the perfect print of our desires.

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Don't put in a single unnecessary feature. Everything which does not contribute to the grace, or the beauty, or the force or the sentiment of your picture detracts from it.— *Birge Harrison.*

THE ROUND ROBIN GUILD MONTHLY COMPETITION

For Beginners Only

Closing the last day of every month. Address all prints to PHOTO-ERA, Round Robin Guild Competition, 383 Boylston Street, Boston, U. S. A.

Restrictions

All Guild members are eligible in these competitions provided they never have received a prize from Photo-Era other than in the Beginners' Class. Any one who has received only Honorable Mention in the Photo-Era Monthly Competition for advanced workers still remains eligible in the Round Robin Guild Monthly Competition for beginners; but upon winning a prize in the Advanced Class, one cannot again participate in the Beginners' Class. Of course, beginners are at liberty to enter the Advanced Class whenever they so desire.

Prizes

First Prize: Value $5.00; *Second Prize:* Value $2.50; *Third Prize:* Value $1.50; *Honorable Mention:* Those whose work is worthy will be given Honorable Mention.

A certificate of award, printed on parchment paper, will be sent on request.

Subject for each contest is "**General**"; but only original prints are desired.

Prizes may be chosen by the winner, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in Photo-Era, or in books.

Rules

1. These competitions are free and open to all members of the Round Robin Guild. Membership is free to all subscribers; also to regular purchasers of Photo-Era on receipt of their name and address, for registration, and that of their dealer.

2. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

3. *Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data.* ***Criticism on request.***

4. *Each print entered must bear the maker's name, address, Guild-number, the title of the picture and the name and month of the competition, and should be accompanied by a letter,* SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what contest it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of Photo-Era, unless otherwise requested by the contestant. If suitable, they will be published in Photo-Era, full credit being given.

6. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15, unless they are packed with *double thicknesses of* ***stiff*** *corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express very cheaply and with indemnity against loss.

Awards — Beginners' Competition

Closed October 31, 1915

First Prize: Lawrence C. Byck.

Second Prize: Guy E. Osborne.

Third Prize: James Allan.

Honorable Mention: W. R. Bradford, Fred W. Clough, Mrs. C. E. Haines, Pollux Hein, Lewis L. Hertzberg, V. Max Kenny, Wilma B. McDevitt, Wm. A. Ray, H. B. Rudolph, C. Howard Schotofer, W. Stelcik, M. C. Still.

Special commendation is due the following workers for meritorious prints: Margaret Anderson, James Bowers, Harry L. Cook, Eva L. Eden, W. H. Frise, Gardner D. Howie, T. W. Lindsell, Charles D. Meservey, A. E. Miller, Louis R. Murray, John H. Pierce, John A. Platt, Harry Prest, Jacob Pudliner, Mrs. H. G. Reed, Myra D. Seales, Lawrence W. Welsh.

Why Every Beginner Should Compete

The trouble with most competitions is that they place the beginner at a disadvantage. If advanced workers be allowed to compete, beginners have little chance to win prizes, and so quickly lose interest after a few trials.

There are two monthly competitions in which prints may be entered with prizes commensurate with the value of the subjects likely to be entered. They are: The Round Robin Guild Competition and the Photo-Era Competition. The former is the better one for a beginner to enter first, though he may, whenever it pleases him, participate in the latter. After having won a few prizes in the Beginners' Class it is time to enter prints in the competition for advanced workers.

As soon as one has been awarded a prize in the Photo-Era Competition, he may consider himself an advanced worker, so far as Photo-Era records are concerned, and after that time, naturally, he will not care to be announced as the winner of a prize in the Beginners' Class, but will prefer always to compete in the Photo-Era Competition for advanced workers. In accordance with this natural impulse, it has been made a rule by the Publisher that prize-winners in the Advanced Class may not compete in the Beginners' Class.

To measure skill with other beginners tends to maintain interest in the competition every month. Competent judges select the prize-winning prints, and if one does not find his among them there is a good reason. Sending a print which failed to the Guild Editor for criticism will disclose what it was, and if the error be technical rather than artistic, a request to the Guild Editor for suggestions how to avoid the trouble will bring forth expert information. The Round Robin Guild Departments form an endless chain of advice and assistance; it remains only for its members to connect the links. To compete with others puts any one on his mettle to achieve the best that is in him, and if, in competing, he will study carefully the characteristics of prize-winning prints every month, and use the Guild correspondence privilege freely, he cannot help but progress

FIRST PRIZE
BEGINNERS' CONTEST

JANUARY LANDSCAPE LAWRENCE C. BYCK

Screening the Eyes

The visibility of objects in the darkroom does not depend merely upon the actual brightness of the light that may be used, but also on the condition of the eyes at the moment, as every photographer realizes. On entering a darkroom from daylight there is very little that is visible at first; but after we have been in for a few moments the eyes have adjusted themselves to the feeble illumination, and we can see clearly things that before we could not see at all. To maintain this sensitiveness of the eyes it is essential that they shall not be exposed to any strong light, and one way in which this can be helped is by so placing or screening the darkroom-lamp that it is never looked at directly at all. There are different ways of accomplishing this. A very good one is to place the lamp on a shelf above the sink or work-bench, so that the shadow of the shelf itself falls on the place where the sensitive films or plates are most exposed, while the height of the lamp keeps it well out of reach of the eyes. Another plan is to have the lamp on the bench itself, with a shade over it to prevent the light from striking upwards. The former plan is on the whole the best, since not only are the eyes shaded from the light, but the illumination is strongest where it is most wanted — that is to say, in the room generally — and weakest where it will do most harm. To get a good general lighting all over the room, however, the lamp must be a large one, and the walls also must be of a light color.—*Photography and Focus.*

Black Tones on Blue-Print Paper

Prof. Sommer, in *Photographische Welt*, recommends the following treatment to tone cyanotype or blueprints to platinum black. Bleach the prints in the following bath, freshly made and filtered:

Borax	23 g.	354 grains
Ammonia	23 g.	354 grains
Water	1,000 cc.	35 ounces

Wash well, and immerse in a saturated solution of gallic acid, to darken. As in the case of other similar processes, it is difficult to obtain clear whites.

Answers to Correspondents

Subscribers and regular readers wishing information upon any point in connection with their photographic work are invited to make use of this department. Address all inquiries to Correspondence Department, PHOTO-ERA, *383 Boylston Street, Boston, U. S. A. If a personal reply is desired, a self-addressed, stamped envelope must be enclosed.*

W. J. E.—Among the **European lenses for sale in this country,** and procurable at the present time, are the following: Rodenstock Eurynar; the Euryplan; Goerz; Steinheil; Linear and Carl Zeiss.

DR. H. T. M.—**The best plates for radiographic work** are said to be the Seed, Wellington and Paragon. This is the opinion of leading surgeons and radiographers in Boston.

A. J. W.—When tone is important in gaslight-paper printing it is far more satisfactory to make up your own developer, because in the stock-solution you can offset the quality of the water you are using and various other local conditions. **It should be possible for you so to regulate your M. Q. developer as to obtain blue-black tones,** but if you find it difficult, such developers as Amidol, Edinol-Adurol and Hydro-Duratol have a tendency to produce such tones.

As to the M. Q. developer, increasing the amount of carbonate slightly will cause the developer to work more vigorously and tend to produce black tones without olive suggestion. It is also important to use as little bromide as is required to keep the whites clear, as more tends toward greenish or brownish blacks, and the amount varies according to the chemical composition of the water. In the case of thin negatives it is essential not to overtime in the printing, as this tends toward a warm tone.

ONE AUTUMN MORN GUY E. OSBORNE

SECOND PRIZE — BEGINNERS' CONTEST

W. J. K.—**A metol-hydroquinone developer should give no trouble about not keeping well** provided it is made up with pure water, fresh sulphite and kept in full sealed bottles, using several small ones rather than a large one only partly full. A few drops from a burning paraffine candle will seal the cork tightly. If you are in the habit of saving used developer for further service, do not put it into a bottle partly filled with new developer, but rather into a separate bottle.

While pyro is the most widely used developer for negatives, and metol-hydroquinone for papers, the latter is also excellent for negatives. Pyro is not suitable for papers, and may not be saved for a second use for negative-development because it oxidizes the most rapidly of any developer and stains the negatives and the fingers.

We doubt if there is any best developer, because the satisfaction it gives depends entirely upon the use to which it is put. Probably the most widely used metol-hydroquinone developer is the following:

Hot water	100	ounces
Metol	½	ounce
Hydroquinone	2	ounces
Sodium sulphite, anhydrous	7½	ounces
Sodium carbonate, anhydrous	12½	ounces
Potassium bromide	120	grains

In cold weather, immediately after dissolving the chemicals, add 13 ounces of wood-alcohol to prevent precipitation. This developer will keep indefinitely in full bottles well stoppered.

For use, take 1 ounce of stock-solution to 2 ounces of water for contrast gaslight papers; 1 ounce of stock-solution to 4 ounces of water for soft and normal gaslight papers, and 1 ounce of stock-solution to 6 ounces of water for bromide papers and negatives. For the latter even a more dilute solution may be preferable. If warmer tones are preferred, or less contrast in negatives, the amount of metol may be increased with corresponding reduction of the hydroquinone when making up the stock-solution.

B. S. B.—**Proper care of the ferrotype-tin will prevent sticking of the print to it.** If the tin has been used for some time the danger is greater. To prevent this, prepare the tin as follows: Dissolve ten grains of beeswax in one ounce of benzine. Allow this to stand for a few hours, in which time a precipitate will be formed. The clear solution thus obtained should be used for polishing the tin, being applied to the surface with a soft Canton-flannel cloth. When the surface of the tin has been thoroughly covered with this preparation, the tin should be polished with a piece of dry Canton-flannel to remove as much of the beeswax as possible. Occasional cleaning of the tin with wood-alcohol is a precaution against sticking.

Print-Criticism

Address all prints for criticism, enclosing return-postage at the rate of one cent for each two ounces or fraction thereof, to Correspondence Department, Photo-Era, *383 Boylston Street, Boston, U. S. A. Prints must bear the maker's name and address, and be accompanied by a letter, sent separately, giving full particulars of date, light, plate or film, stop used, exposure, developer and printing-process.*

J. W. D. T.— While the composition is attractive your photograph of "Shadow and Sunlight" shows extreme contrast with little gradation. The sunlit areas, and particularly the branches and foliage of the trees, are much too white, probably the result of overdevelopment. "The Edge of the Wood" also shows halation.

G. M. R.— A softer-working paper would improve "The Silent Places;" and why not trim the print so that the water-line will be level?

J. H.—"Last Work of the Day" is not a particularly attractive subject. It has been enlarged somewhat beyond the limitations of detail in the original negative. Has it ever occurred to you to trim this subject to a horizontal composition? Doing so would in a measure mitigate the absence of a suitable sky showing through the trees.

S. A. W.—"The Parthenon" is unfortunate in the absence of a sky, the quality of which would have been reflected in the water. Perhaps a softer-working paper such as Artura Iris will give greater richness to the foliage and soften the sky and water.

M. de L. I.— Your baseball group is very good, although a slightly softer-working paper might be better — a paper such as Artura Iris.

"Circus Day" was apparently made with a soft-focus lens, and the subject does not appear to lend itself to that sort of treatment.

R. I. J.—"Beyond the Bridge" is unfortunate in not showing more or less of the bridge — either would be an improvement, for the present composition does not make it clear that the subject is a bridge, and it certainly is not an attractive bridge.

H. P.— Both of your subjects are undertimed and forced in development, and such negatives cannot be successfully printed on a hard-working paper. "The Glades" serves to show the undesirability of a light foreground together with a darker middle-distance and distance. The result is to attract the eye to something unimportant and hold it there even though the real picture is far beyond.

D. T.—"Morning after the Shower" is too dark and indistinct, and too much importance is given to the puddles of water, if they be such, and not enough to the figure of the man.

K. D. S.—"Along the Kill" is unfortunate as a composition. Place your finger over the stone in the foreground and see how greatly it improves the picture. Also, had you been back from the shore somewhat, enough to include the trees at the left and right, the composition would have been still further improved.

"The Hasbrouck House" is a trifle crowded in the space; apparently the camera was not level, although these old houses are often far our of plumb themselves.

"Indian Pipes" is apparently underexposed and perhaps forced in development. The surroundings are much too dark and the flowers too white.

The silhouette is excellent, although another pose might perhaps have been better — one which would seem more spontaneous.

H. G. R.— Most of the portraits you have submitted indicate overdevelopment — the result being absence of detail in the highlights. A somewhat thin negative is necessary in portraiture. Exposure must be ample, and a dilute slow-working developer is desirable. Very likely the appearance of these subjects can be improved by the use of a soft paper.

J. R. T.— Although some of your subjects are underexposed, notably "But I go on Forever," they are, as a whole, printed on too hard-working paper. A softer-working paper would render the black less intense, give gradation and much more detail in the whites.

W. J. H.— Undoubtedly "Old St. Paul's" is difficult to photograph. There are evidences that the church-yard is of somewhat limited area, and for that reason a wide-angle lens might have proved beneficial, making it possible to have included the tip of the steeple and perhaps to have omitted the distorted leaves at the upper left-hand corner.

MORNING LIGHT JAMES ALLAN

THIRD PRIZE — BEGINNERS' CONTEST

Photo-Era Exposure-Guide

Calculated to give Full Shadow-Detail, at Sea-Level, 42° N. Lat.

For altitudes up to 5000 feet no change need be made. From 5000 to 8000 feet take ¾ of the time in the table. From 8000 to 12000 feet use ½ of the exposure in the table.

Exposure for average landscapes with light foreground, river-scenes, light-colored buildings, monuments, snow-scenes with trees in foreground. For use with Class 1 plates, stop **F/8**, or **U. S. 4.** For other plates, or stops, see the tables on the opposite page.

*These figures must be increased up to five times if the light is inclined to be yellow or red.
†Latitude 60° N. multiply by 3; 55° × 2; 52° × 2; 30° × ¾.
‡Latitude 60° N. multiply by 2; 55° × 2; 52° × 1½; 30° × ¾.
¶Latitude 60° N. multiply by 1¼; 55° × 1; 52° × 1; 30° × ½.
§Latitude 60° N. multiply by 1¼; 55° × 1; 52° × 1; 30° × ½.

	MONTH AND WEATHER																			
	JAN., NOV., DEC. †					FEB., OCT. ‡					MAR., APR., AUG., SEPT. ¶					MAY, JUNE, JULY §				
HOUR	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull
11 A.M. to 1 P.M.	1/32	1/16	1/8	1/4	1/2	1/32	1/16	1/8	1/4	1/2	1/50	1/25	1/12	1/6	1/3	1/60	1/30	1/15	1/8	1/4
10–11 A.M. and 1–2 P.M.	1/25	1/12	1/6	1/3	2/3	1/25	1/12	1/6	1/3	2/3	1/40	1/20	1/10	1/5	1/2	1/60	1/30	1/15	1/8	1/4
9–10 A.M. and 2–3 P.M.	1/12*	1/6*	1/3*	2/3*	1*	1/16	1/8	1/4	1/2	1*	1/40	1/20	1/10	1/5	1/2	1/50	1/25	1/12	1/6	1/3
8–9 A.M. and 3–4 P.M.						1/5*	1/2*	1*	1½*	3*	1/30	1/15	1/8	1/3	2/3	1/30	1/15	1/8	1/4	1/2
7–8 A.M. and 4–5 P.M.											1/20	1/10	1/5	1/2	3/4	1/20	1/10	1/5	1/3	2/3
6–7 A.M. and 5–7 P.M.											1/15*	1/8	1/2*	3/4*	1*	1/15	1/8	1/4	1/2	3/4
5–6 A.M. and 6–7 P.M.																1/10*	1/5*	1/3*	2/3*	1½*

The exposures given are approximately correct, provided the shutter-speeds are accurately marked. In case the results are not just what you want, use the tables merely as a basis and increase or decrease the exposure to fit the conditions. Whenever possible keep the shutter-speed uniform and vary the amount of light when necessary by changing the stop. **Focal-plane shutters require only one-third of the exposures stated above.**

SUBJECTS. For other subjects, multiply the exposure for an average landscape by the number given for the class of subject.

1/8 **Studies of sky and white clouds.**

1/4 **Open views of sea and sky**; very distant landscapes; studies of rather heavy clouds; sunset- and sunrise-studies.

1/2 **Open landscapes without foreground**; open beach, harbor- and shipping-scenes; yachts under sail; very light-colored objects; studies of dark clouds; snow-scenes with no dark objects; most telephoto-subjects outdoors; wooded hills not far distant from lens.

2 **Landscapes with medium foreground**; landscapes in fog or mist; buildings showing both sunny and shady sides; well-lighted street-scenes; persons, animals and moving objects at least thirty feet away from the camera.

4 **Landscapes with heavy foreground**; buildings or trees occupying most of the picture; brook-scenes with heavy foliage; shipping about the docks; red-brick buildings and other dark objects; groups outdoors in the shade.

8 **Portraits outdoors in the shade**; very dark near objects, particularly when the image of the object nearly fills the plate and full shadow-detail is required.

16 to 48 **Badly-lighted river-banks**, ravines, glades and under the trees. **Wood-interiors** not open to the sky. **Average indoor-portraits** in a well-lighted room, light surroundings.

PLATES. When plates other than those in Class I are used, the exposure indicated above must be multiplied by the number given at the head of the class of plates.

For Perpetual Reference

For other stops multiply by the number in the third column

As all the figures in the table opposite are based upon the use of stop F/8, or U. S. 4, it does not appear here among the ratios for other stops.

U. S. 1	**F/4**	**× 1/4**
U. S. 2	**F/5.6**	**× 1/2**
U. S. 2.4	**F/6.3**	**× 5/8**
U. S. 3	**F/7**	**× 3/4**
U. S. 8	**F/11**	**× 2**
U. S. 16	**F/16**	**× 4**
U. S. 32	**F/22**	**× 8**
U. S. 64	**F/32**	**× 16**

Example

The factors that determine correct exposure are, first, the strength of light; second, the amount of light and dark in the subject; third, speed of plate or film; fourth, the size of diaphragm used.

To photograph an average landscape with light foreground, in Feb., 2 to 3 P.M., bright sunshine, with plate from Class 1, R. R. Lens, stop F/8 (or U. S. 4). In the table look for "Hour," and under the column headed "Bright Sunshine," note time of exposure, 1/16 second. If a smaller stop is used, for instance, F/16, then to calculate time of exposure multiply the average time given for the F/8 stop by the number in the third column of the table for other stops, opposite the diaphragm chosen. The number opposite F/16 is 4. Multiply 1/16×4=1/4. Hence, the exposure will be 1/4 second.

For other plates consult the table of plate-speeds. If a plate from Class 1/2 be used, multiply the time given for average exposure, F/8 Class 1, by the number of the class. 1/16×1/2=1/32. Hence, the exposure will be 1/32 second.

Speeds of Plates on the American Market

Class-Numbers. No. 1, Photo-Era. No. 2, Wynne. No. 3, Watkins

Class 1/3, P. E. 156, Wy. 350, Wa.
Ilford Monarch
Lumière Sigma
Marion Record
Seed Graflex
Wellington Extreme

Class 1/2, P. E. 128, Wy. 250, Wa.
Ansco Speedex Film
Barnet Super-Speed Ortho.
Central Special
Cramer Crown
Eastman Speed-Film
Hammer Special Ex. Fast
Imperial Flashlight
Seed Gilt Edge 30
Wellington 'Xtra Speedy

Class 3/4, P. E. 120, Wy. 200, Wa.
Ansco Film, N. C.
Atlas Roll-Film
Barnet Red Seal
Cramer Instantaneous Iso.
Defender Vulcan
Ensign Film
Hammer Extra Fast, B. L.
Ilford Zenith
Imperial Special Sensitive
Paget Extra Special Rapid
Paget Ortho. Extra Special Rapid

Class 1, P. E. 111, Wy. 180, Wa.
American
Barnet Extra Rapid
Barnet Ortho. Extra Rapid
Central Comet
Imperial Non-Filter
Imperial Ortho. Special Sensitive
Kodak N. C. Film
Kodoid
Lumière Film and Blue Label
Marion P. S.
Premo Film-Pack
Seed Gilt Edge 27
Standard Imperial Portrait
Standard Polychrome
Stanley Regular
Vulcan Film
Wellington Anti-Screen
Wellington Film
Wellington Speedy
Wellington Iso. Speedy

Class 1 1/4, P. E. 90, Wy. 180, Wa.
Cramer Banner X
Cramer Isonon
Cramer Spectrum
Defender Ortho.
Defender Ortho., N.-H.
Eastman Extra Rapid
Hammer Extra Fast Ortho.
Hammer Non-Halation
Hammer Non-Halation Ortho.
Seed 26x
Seed C. Ortho.
Seed L. Ortho.
Seed Non-Halation
Seed Non-Halation Ortho.
Standard Extra
Standard Orthonon

Class 1 1/2, P. E. 84, Wy. 160, Wa.
Cramer Anchor
Lumière Ortho. A
Lumière Ortho. B

Class 2, P. E. 78, Wy. 120, Wa.
Cramer Medium Iso.
Ilford Rapid Chromatic
Ilford Special Rapid
Imperial Special Rapid
Lumière Panchro. C

Class 3, P. E. 64, Wy. 90, Wa.
Barnet Medium
Barnet Ortho. Medium
Cramer Trichromatic
Hammer Fast
Ilford Chromatic
Ilford Empress
Seed 23
Stanley Commercial
Wellington Landscape

Class 5, P. E. 56, Wy. 60, Wa.
Cramer Commercial
Hammer Slow
Hammer Slow Ortho.
Wellington Ortho. Process

Class 8, P. E. 39, Wy. 30, Wa.
Cramer Contrast
Cramer Slow Iso.
Cramer Slow Iso. Non-Halation
Ilford Halftone
Ilford Ordinary
Seed Process

Class 100, P. E. 11, Wy. 3, Wa.
Lumière Autochrome

OUR ILLUSTRATIONS

WILFRED A. FRENCH

By courtesy of those sterling artists the Gerhard Sisters, of St. Louis, we are enabled to present a series of highly interesting portraits in this issue. The initial subject is the man smoking a pipe, and repeated on page 11, although, strictly speaking, it is a genre, as the dignity and seriousness of a portrait are not present. The element of humor has been expressed with sincerity, and the attitude of the subject is natural and pleasing. Owing to its nearness to the camera, the hand appears unduly magnified; but this non-observance of correct proportions does not seriously mar the general artistic effect. The double lighting and illusion of plasticity show a command of technical resources. Data: Subject, Mr. Roger Grey, actor; 11 x 14 Eastman portrait-camera; 14-inch Darlot portrait-objective; medium stop; September, noon; Cooper Hewitt light and daylight; 8 x 10 dryplate; quickest bulb-exposure.

Next in this interesting series comes the frontispiece. The pose of the girl is dramatic and unconventional, and the general technique well-nigh perfect. The extended right hand seems to refer to the petals which have fallen from the flowers above. The exquisite detail in the dress with its fur-trimmings is due partly to the searching quality of the artificial light used. Data: December, morning; dark day; Zeiss-Tessar; at full opening; Cooper Hewitt light; 8 x 10 dryplate; pyro.

The portrait of Miss Lydia Schilling, page 4, is one of a number of the same subject made by the Gerhard Sisters. It shows a profile of distinct and refined beauty, which lends itself to artistic portrayal by a skilled and sympathetic artist. The lighting is particularly pleasing in its full and delicate gradations, and eminently appropriate to the classical character of the head. Data: September; 14-inch Darlot portrait-objective; at full opening; Cooper Hewitt light; 8 x 10 dryplate; pyro. This, one of the Gerhard Sisters' "soul" pictures, was selected for the National Salon, at the Indianapolis convention. The sitter, herself a photographer, was chosen last March as one of the fifty "most beautiful" women in America.

The portrait of an American explorer — Dr. Frederick A. Cook — page 7, is correct to the life, and one of the most notable successes of this gifted pair of artists. It is extremely creditable to their skill in delineating character. While the pose is a conventional one, it may be understood by many to suggest that the doctor's activity with the pen exceeds that of his explorations. Certainly, there seems abundant room for him to explain with his pen certain experiences in his remarkable career. The clearly delineated countenance, with its character emphasized by the searching quality of the light employed, affords a good opportunity for analysis and contemplation. Data: November, 4 P.M.; Zeiss-Tessar; at full opening; Cooper Hewitt light and daylight; 2 seconds; 8 x 10 plate; pyro.

The picture of a girl relieved against her own shadow is very interesting, page 8. The idea is not new, but has been used here to produce an unusual effect at the desire of the model — Cleo Gascoigne, actress. Data: January; dark day; Zeiss-Tessar; at full opening; 2 seconds; 8 x 10 dryplate; pyro; Cooper Hewitt light; Eastman 11 x 14 portrait-camera used exclusively.

"The Steam-Ram," page 14, reveals the pictorial abilities of the author to a greater extent than his picture "A Sunlit Porch," published in our October issue, and which received the first prize in the Round Robin Guild Competition. As Mr. Krause had never before entered a picture for competition anywhere, PHOTO-ERA may be said to have discovered this eminently gifted picture-maker. The picture seizes and holds the interest of the beholder. Its novelty of subject is compelling; so is the masterly grasp and treatment. The design is bold, but not without what might be construed as a violation of one of the rules of composition — the large beam extending diagonally across the picture. But, as the saying is, it depends upon who does it, and how. Many of my musical readers are doubtless aware that the use of consecutive fifths in musical harmony used to be considered a solecism, and among Beethoven's letters, preserved in the museum of the Beethoven House, at Bonn, I noticed one in which the master upbraided a pupil for employing consecutive fifths —"an unpardonable crime." It took a Richard Wagner to disregard tradition and to produce superb effects, and since his day the progression of perfect fifths is permissible under certain conditions. Hence, all will allow that Mr. Krause's license is justifiable and needs no apology. The disposition of the human figures indicates artistic judgment, and the sense of height (elevation from the ground) is also well suggested. Data: A summer morning; bright; Ica Bébé camera, $2\frac{1}{2}$ x $3\frac{1}{2}$ inches; $4\frac{3}{4}$-inch Tessar Ic; stop, F/6.3; $\frac{1}{50}$ second; Lumière Ortho A; Eastman M. Q. developer; enlargement of part of negative on Cyko Professional Buff.

Lovers of technique will find nothing to criticize in Mr. Ludlum's "On the Old Wagon-Road," page 16. Owners of trimming-boards will, doubtless, regret that they did not have a chance to cut a good, broad strip off the bottom of the print before it was sent to the engraver. There seems some justification for that; but the author wanted to include as much as possible of that gracefully curving road with its many shadows — and who can blame him? Data: March, 11 A.M.; light haze; 5 x 7 Premo fitted with $6\frac{3}{4}$-inch Velostigmat; stop, F/16; 6-time color-screen; 1 second; 5 x 7 Orthonon plate; pyro; Cyko Prof. print.

Although the art-museum, page 17, is as sharp as sharp can be, one is thankful that the reflection is slightly blurred, for perfect reflections do not appeal to the artistic sense. This beautiful row of Ionic columns is regarded as one of the architectural gems in the Hub. Data: April 23, 1915, 6 P.M.; light, good for the time of day; 8 x 10 view-camera; 8 x 10 Ross Rapid Symmetrical; stop, F/32; 2 seconds; Standard Orthonon; hydro. (special formula); 7 x 10 Azo.

The portrait of a boy, page 21, is one of the best Mr. Frey has contributed to this magazine. The tone of the original print was superb — warm and rich. Unfortunately there are no data.

The portrait of the late John La Farge, American painter, page 22, is said to have won the hearty approval of the artist. The halftone belongs to a series of grain-plates made for PHOTO-ERA about ten years ago. The effect is not altogether bad, a certain breadth being gained by the process. The hands are arranged in a perfectly natural way, the left being slightly less distinct than the right — an advantage due to insufficient depth of the lens. The background is not particularly disagreeable; but might have proved so, had the lens revealed the detail of what appears to have been some figured fabric. The portrait is sufficiently meritorious to warrant a desire to know the identity of the photographer. Who can enlighten us?

No genuine lover of nature whose eye rests on Kenneth Hartley's magnificent picture, page 26, can fail to be moved by the scene of grandeur thus presented. The beholder can easily imagine himself way up among the clouds, and also far beneath them — midway, as it were. The intelligent use of a color-screen by this master-photographer is responsible for the variety and fidelity of the different color-values in this extensive and far-reaching view. Data: June 25, noon; 14,000 feet altitude; hazy sun in spots; 5 x 7 Century camera; $8\frac{1}{4}$-inch Cooke lens; B. & J. ray-filter; 5 x 7 Orthonon; hydro-metol; 10 x 14 print on Enlarging-Cyko.

The engrossing portrayal of a Japanese garden, page 34, would seem to need color to convey an adequate idea of its alluring beauty. The pictorial possibilities among the landscape-gardens of the nature-loving people of Nippon are said to be unlimited; but on account of the typical profusion of flowering plants and decorative objects, it must be difficult for the camerist to obtain a composition of artistic simplicity. To fuse these manifold attractive interests into an harmonious monochrome would seem to be no easy task. Shoji Hirai's subject, however, is comparatively unincumbered; but the effect produced is one of full sunshine rather than one of conventional chiaroscuro with elongated shadows, or even of diffused sunlight. The result shown here appears a trifle crude, owing to the absence of color-values. Some of our readers may be moved to ask if Japanese camerists make use of color-screens in their pictorial work. Data: September afternoon; good light; Folding Ansco; R. R. lens at F/16; $\frac{1}{25}$ second; Ansco film; M.Q.; Enlarging-Cyko Platinum.

Photo-Era Monthly Competition

The contest under consideration created considerable interest; but among the numerous entries there were not many that indicated a clear interpretation of the subject —"Garden-Scenes." Among the many unsuccessful attempts to carry out the idea were pictures of single flowers, girls posed stiffly among blossoming bushes or shrubs in the alleged act of picking a flower, and views of attractive gardens but of inartistic design. Indeed, the jury found it hard to choose a sufficient number of prints having prize-winning qualities. This explains the absence of a picture worthy to be accorded the first prize. Considering the subject from various angles and with all fairness, I am forced to declare the contest one of the most difficult Photo-Era has given out for some time. It must be borne in mind that the art-element is required to be plainly evident. A mere technically excellent effort will not suffice. Mr. Field's portrayal of a garden-scene, page 31, has winsome qualities that are quite obvious. The picture is vibrating with sunlight, and there is spontaneity and grace in the maiden's momentary attitude of plucking a flower. Acknowledging the full degree of charm that the picture breathes, one is inclined to regret that the artist appears to have overlooked the unfortunate part played by the lady's hat. It is the most conspicuous object in the picture, although in design it seems to harmonize with the somewhat elaborate robe of the model, herself a vision of loveliness. Data: August, 6 p.m.; filtered sunlight; 9-inch soft-focus lens at F/5.6; bulb exposure; Seed 30; pyro-soda; 5 x 7 Iris E. Smooth.

Quite different in character and treatment from Mr. Field's charming episode is Mr. Prior's decorative design, page 33. There is no mistaking the intelligence and precision of the contestant in carrying out the spirit of the subject. The picture represents the skill and taste of a landscape-architect, and the photographer has performed his share in a thoroughly able manner. The suggestion of severity in the lines of the original design would seem to make it difficult for the photographer to do more with it than Mr. Prior has done, unless he called to his aid the element of sunlight and shadow, or gave the picture the value of human interest. Data: August, between 10 and 12 a.m.; bright light; 5 x 7 Korona camera; single element of Protar lens; 14-inch focus; stop, U. S. 32; 3-time ray-filter; Standard Orthonon; pyro-soda; 5 x 7 print on Azo B Hard.

The Beginners' Competition

The pleasing snow-scene, page 37, is due partly to the use of mechanical resources in the production of certain artistic effects — in this case suppression of detail. The arrangement is not tediously conventional, and the result justifies the resort to mechanical aids. Data: January, 1914, early afternoon; soft sunshine; $6\frac{1}{2}$ x $8\frac{1}{2}$ view-camera; 16-inch rear combination of R. R. lens, at F/22; 3-time ray-filter; 3 seconds; Standard Orthonon; diluted M. Q.; direct American Platinum print; two thicknesses of black silk over lens for diffusion.

Guy E. Osborne's picture of an autumn-morning, page 38, is a well-ordered design. The dark masses are arranged to produce a rich, virile impression of solidity. The corn-shocks — which have served long and faithfully as picture-material — take their places in modest and artistic fashion, and form an admirable sequence begun by the tree at the left. The long, broad shadows blend well with the somber background, so that the distant tree, at the right, seems a trifle too conspicuous in its capacity as foil. Data: October 23, 1915, 6.30 a.m.; good sunlight; 14-inch rear combination of Turner-Reich Anastigmat; chiffon screen over lens; stop, 10; 1 second; 5 x 7 Hammer Extra Fast; three-solution pyro-soda; direct Professional Buff Cyko; 5x7 Conley camera.

In James Allan's "Morning-Light," page 39, there is a judiciously planned gradation — at least, such is the inference — from a middle-tone, including the two black posts in the foreground, to the strongest highlight, the uppermost cloud. The spectacular cloud-formation, which dominates this superb marine-picture, suggests several vast human shapes rushing with amazing swiftness through the heavens. The values are true and the technique is exceptionally good. Data: October 5, 1915, 7.30 a.m.; bright light; 4 x 5 Reflex camera; 7-inch Goerz Celor; stop, U. S. 8; 3-time color-screen; $\frac{1}{25}$ second; Imperial S. S. Ortho; Duratol; direct print on Argo Hard Velours; Duratol.

Talbot and the Incandescent Gas-Mantle

Photography owes so much to Fox Talbot that the other researches of that indefatigable experimenter are apt to be overshadowed. It is known that he was one of the earliest to give any suggestion of what is now known as spectrum analysis; but it is not so well known that it is upon experiments of his that the incandescent gas-mantle is based. He pointed out, eighty years ago, that paper could be soaked with certain salts, such as calcium chloride, and then dried and the paper burned away, leaving a fine network of white ash which, when heated in the flame of a spirit-lamp, gave out a brilliant light.—*Photography and Focus.*

ON THE GROUND-GLASS

WILFRED A. FRENCH

Professional Amateurs

The word is paradoxical, says *Photographische Industrie*, and yet it represents a kind of photographic activity that is not at all new, but only now, during wartime, demands proper definition, because formerly the term was applied to those who had not learned photography in the regular way, but, not confining themselves to amateur work, also made a business of it. In time of peace the term "professional amateur" was applied mostly to those who took occasional photographs and to a certain extent worked as traveling photographers, and when their activities reached a certain point they were required by government regulation to take out a traveling-license. Now, during the war, however, the professional amateurs work in a quite different way. The scarcity of photographic help, on account of the large number called to the colors, has given rise to advertisements like the following in the newspapers:

> "PHOTOGRAPHIC AMATEUR
>
> "WANTED, as assistant in one of the leading photographic studios, a skilful, artistic amateur photographer who has special experience in modern printing-processes. Please apply at . . . "

So long as in Germany — contrary to Austria-Hungary — a certificate of competency is not required for the practice of photography as a business, there is nothing to hinder an amateur from working in a business way. But when the war is over this kind of activity on the part of the "professional amateurs" will stop, or at least be limited, because there will no longer be a scarcity of workmen.

Home-Exhibitions

It is gratifying to notice the revival of the custom among amateurs to hold exhibitions of their pictorial work in their own homes, and issue invitations to friends and acquaintances.

There are several pleasant features connected with these home-exhibitions. If highly meritorious, the pictures will establish or extend the reputation of the exhibitor. To increase the sociability of the function, light refreshments or afternoon-tea could be served. Incidentally the wife, mother or sister of the host will have an exceptional opportunity to meet his personal friends. In any event it may afford the lady a pleasant diversion from her monotonous household-duties.

If he so desires, the exhibitor can utilize the opportunity thus presented to sell his pictures, be the object personal profit or charity. As to the prices to be charged, that depends on circumstances. Exorbitant prices, with little hope to make many sales, might mean that the host is a pictorialist of high rank; whereas the absence of prices, that he was purely an amateur.

In any event, it will not occur to the exhibitor to revive the silly custom of an erstwhile Boston amateur — an effeminate freak — to insist that his guests approach each picture with a deferential air, one hand carrying a lily and the other a lighted candle.

If the amateur wants to go a step further, or to assume an unselfish, altruistic attitude, he can devote these home-exhibitions to the works of eminent pictorialists, a one-man show by Dr. D. J. Ruzicka, Dr. F. F. Sornberger or Karl Struss, or by professional practitioners, such as the Gerhard Sisters, Eugene Hutchinson or J. H. Field, being, perhaps, more distinctive than a collection of pictures by various artists.

The Painter's Conception of a Still-Life

A correspondent, expressing his satisfaction with Mr. Bradford's still-life pictures, in December Photo-Era, wonders if painters observe the laws of simplicity in presenting subjects of this character. I am sorry to say, no, so far as I have been able to observe. The still-life pictures by Dutch artists of the old school that are scattered throughout the art-museums of Europe are generally over-crowded with objects — game, vegetables and kitchen-utensils, piled into an heterogeneous mass. The painters of to-day are more reasonable in the creation of their designs. Still, there is room for improvement in most pictures of this class, particularly in meaning and sentiment.

A STILL-LIFE WITH DOUBLE INTEREST

A still-life in a collection of pictures by Boston artists, exhibited in the Hub recently, was not remarkable for simplicity and logic of design. The central object was half of a ham, with a fork stuck in at the top. Lying in front of it, on a gray-colored plate, were two large, dried herrings. Close to these viands lay half of a French loaf and, on the other side, an empty goblet, a peeled onion and a fork. Behind this group was a large, gray water-pitcher. The plate rested on a large, white napkin, which, in its immaculate whiteness, hung down in front of the table, and was easily the most conspicuous feature of the composition. The picture impressed one as a cold, perfunctory and totally artificial arrangement. While not exactly incongruous, the various objects did not seem to constitute a logical picture of spontaneous, convincing design. The artist may have intended to represent the remains of a bachelor's repast, all huddled together; but the multiplicity of objects prevented the creation of a simple, forceful and logical composition. As John J. Enneking, the eminent painter, has said quite truthfully, "The average painter can well afford to take a leaf out of the note-book of the progressive photo-pictorialist. He, too, is striving for unity in composition, and sometimes succeeds wonderfully well."

EVENTS OF THE MONTH

Announcements and Reports of Club and Association Meetings, Exhibitions and Conventions are solicited for publication

Pictorial Photographs at the Print-Gallery

A large collection of prints by eminent American photo-pictorialists — professionals and amateurs — was shown at the Print-Gallery, 707 Fifth Avenue, New York, December 1 to 31. Preparations had been made to display the photographs to the best possible advantage, and the entire show produced an artistically pleasing and inspiring effect. Most of the prints were for sale, the prices varying from $3.50 to $50; and a 5 x 8 landscape, "Near Amalfi," by Karl Struss, was marked $75. A large number of prints were sold. The exhibition, pronounced by connoisseurs a remarkable one, attracted considerable attention. Among the exhibitors were Hilda Altschul, Dwight A. Davis, Arnold Genthe, John W. Gillies, Louis A. Goetz, Forman Hanna, Gertrude Käsebier, Chas. R. Keeler, W. H Rabe, Dr. D. J. Ruzicka, Geo. H. Seeley, Karl Struss, A. Thibaudeau, Floyd Vail, Bertrand H. Wentworth, Clarence H. White, Roger B. Whitman, Mary W. Wiltse and Wm. S. Young.

W. A. Taprell

The photographic trade has sustained another great loss in the death of W. A. Taprell, of Taprell, Loomis & Co., the well-known card-mount manufacturers, who passed away November 14 at his home in Oak Park, Chicago, at the early age of forty-eight. Born in Bath, Somersetshire, England, Mr. Taprell has been a resident of Chicago for the past twenty-eight years, during which his charming personality made for him a wide circle of friends there and throughout the country, for his business-activities were nation-wide.

A Photographic Hall of Honor for Soldiers

A noteworthy proposition has been made by Professor Kampfmayer, of Geibsdorff, Schlesswig, who has called upon his fellow-townsmen to obtain the photographs of all soldiers of the place who have been called to the front. These are to be placed in a specially built hall, as a reminder of the brave men who are fighting for their country. Not a bad idea.

Mr. Bill Entertains the Camera Club of Cincinnati

On the evening of November 27 the members of the Camera Club of Cincinnati were entertained by J. Anthony Bill at his studio, 122 West Fourth Street, Cincinnati, O. Mr. Bill has distinguished himself as a high-class artist in portraiture, especially of beautiful women, and his guests were well entertained by the inspection of his studio and pictures. Later the studio was transformed into an exhibition-hall, and a lantern-slide lecture on "Photography as a Pastime" was delivered by Mr. G. A. Ginter, secretary of the club, the slides having been made by club members. Mr. Bill then served an excellent luncheon in an adjoining room, which was much enjoyed. The guests one and all came away strong in the conviction that their gracious host is a wide-awake and skilful photographer.

Frank Scott Clark, Artist

Frank Scott Clark, of Detroit, owes much of his executive ability as an artist-photographer to his training and experience as a painter. The exhibition held by the Scarab Club in the Detroit Museum of Art, December 1 to 20, 1915, consisted of paintings exclusively of Michigan painters, including three by Mr. Clark; viz., "Scituate-Twilight," "The North Country" and "Golden Sunset." The beautiful catalog of the exhibition included, among other illustrations, one of Mr. Clark's "Scituate-Twilight," which suggests a nobility of conception, poetic sentiment and command of technical resources that one would expect of a portrait-photographer of Mr. Clark's distinguished rank

William H. Rau as a Lecturer

William H. Rau, the well-known all-around expert photographer, spoke on invitation before the Cadets at the U. S. Military Academy at West Point, recently, on photography, and included a large number of pictures of travel to the South Pacific Ocean and, in fact, around the world, with the American Transit of Venus-Exposition, and another trip up the Nile to the Second Cataract, thence going over the desert of Arabia through Syria and through Palestine. He also talked on British Columbia and Yellowstone Park, showing only exceptionally good pictures and giving a general idea of the various kinds of work done by photographers, like himself, who are termed "commercial." He also introduced some pictures that were made for advertising and for law-suits, making the entertainment one of great pleasure and satisfaction to his listeners, who completely filled the large auditorium.

The Doctor's Advice

Inexorable examiner, after diagnosis: "I find that your osseous bichromate deflector reverberates against the inferior maxillary of the altruistic kodak region. Also the pyro-splenius collides too frequently with the hypodermic sartorius major. I advise vigorous exercise in the open air."

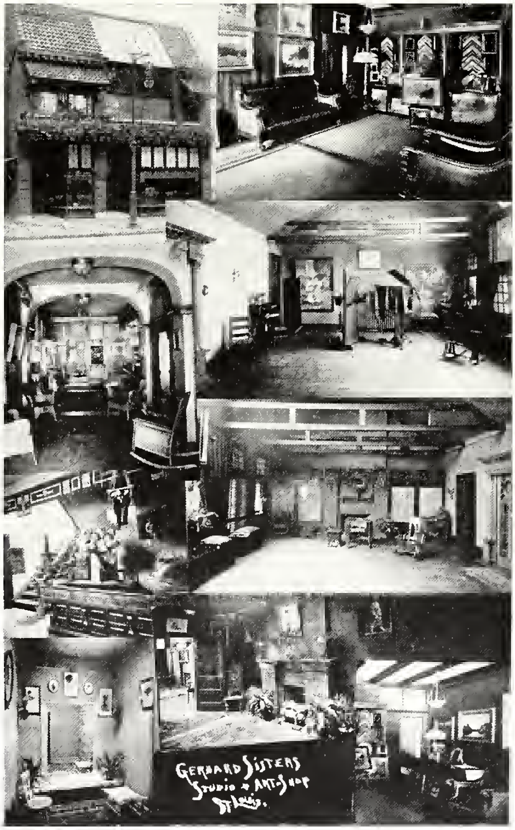
Weakly camerist (greatly alarmed): "What would you advise, Doctor?"

Doctor: "Get a place on the Boston traffic-squad."

Exhibition of Color-Photographs and Monochromes

An excellent and interesting exhibition of color-photographs was held by the Newark Museum Association, in Newark, N. J., November 16 to December 6. There were portraits by Clara E. Sipprell and U. S. Kahn, landscapes and interior work by Paul L. Anderson, Karl Struss, Frank R. Bill, George B. Hollister and others.

In addition there was a collection of new monochromes by Clarence H. White, Paul L. Anderson, Alice Boughton, Clara E. Sipprell and Mrs. Walter Harvey. Edward R. Dickson showed a number of his admirable phantom-figure platinum prints.



A CONVINCING POSTCARD-ADVERTISEMENT

The Gerhard Sisters' Studio

Those remarkable artists the Gerhard Sisters, of St. Louis, specimens of whose work adorn this issue, are progressive business women. The accompanying group of views of their attractive studio is in the form of a postcard, which is sent in the mail to patrons, friends or any one who appreciates photographic excellence.

Galveston Photographers Organize

The professional photographers and dealers in photo-supplies of Galveston, Tex., are living up to the reputation of that progressive state. Realizing that co-operation will work wonders they have formed an organization for mutual benefit, through which they intend to educate the public in the many advantages of photography in every line of business. The organization will be known as The Professional Photographers' Association of Galveston, and its officers are as follows: Paul Naschke, president; C. B. Smith, first vice-president; V. E. Gregg, second vice-president; N. V. Clark, secretary; Paul Verkin, Sr., treasurer. Advertising-committee: H. H. Morris, C. B. Smith, Joseph Maurer.

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It is good to have money and the things that money can buy; but it is good also to check up, once in a while, and find out whether you are missing some of the things that money can't buy.—*The Printing Art.*

BOOK-REVIEWS

Books reviewed in this magazine, or any others our readers may desire, will be furnished by us at the lowest market-prices. Send for our list of approved books.

The Dolls' Day. By Carine Cadby. Illustrated with 29 photographs by Will Cadby. Crown, 8vo. Price, cloth, in England, 18d. London: Mills & Boon, Ltd.

How Charles, Belinda and the baby, doll-children of little eight-year-old Stella, came to life in her dreams in response to a wish; how they ran away, and the many thrilling adventures they had with a cat, a rabbit, a dog, a squirrel and a strange girl in the neighboring fields and woods before finding their way back to their anxious little mother provides subject-material for a charming story for little girls of vivid imagination and mother-instinct. Written as only Carine Cadby can write it, and illustrated with twenty-nine specially posed photographs by Will Cadby, the volume provides a gift-book of exceptional character for youthful readers. Several interesting facts about the making of the illustrations are described by the authors themselves in the "London Letter" on another page.

The American Annual of Photography. 1915. Volume XXX. Edited by Percy Y. Howe. 328 pages, with copious illustrations in black and in tint. Price, paper, 75 cents. Cloth, $1.25. New York: George Murphy, Inc., 57 E. Ninth Street, sole sales-agent.

The latest edition of our ever-welcome and only American photographic annual has just come to hand, more thoroughly American than ever before, for one notices the absence of a few former English and European contributors, doubtless due to the war. As a whole the work comprises a diverse and carefully chosen miscellany, covering most of the commonly practised branches of photography.

This year the important and helpful text seems to take precedence over the illustrations, and the student will find much of value to interest him in the contributed articles of the following well-known men: Sidney Allan, J. A. Anderson, Paul Lewis Anderson, A. H. Beardsley, C. H. Claudy, William S. Davis, Charles E. Fairman, William Findlay, G. T. Harris, T. W. Kilmer, M.D., A. Lockett, Marcus G. Lovelace, C. E. Kenneth Mees, Malcolm D. Miller, M.D., Harry G. Phister, H. D'Arcy Power, M.D., Henry F. Raess, F. M. Steadman and E. J. Wall, F.R.P.S.

The illustrations in black, of which there are many, are good, but the inserts on dull-finish India-tint paper, although excellent subjects, appear in a few instances to have suffered somewhat at the hands of the printer or engraver, or both. Among those workers especially well represented may be mentioned: William Armbruster, Baker Art Gallery, Alice Boughton, Rupert Bridge, F. O. Butler, Thomas Carlyle, Mary Carnell, Harold Cazneaux, Rudolf Dührkoop, Rudolf Eickemeyer, S. P. Emerick, Louis Fleckenstein, John Wallace Gillies, Goodlander Sisters, G. T. Harris, G. W. Harting, Knaffl & Bro., William T. Knox, Warren R. Laity, A. F. Muhr, Carl A. Peterson, J. R. Peterson, Ira D. Schwarz, George Steele Seymour, Kate Smith, Karl Struss, Sidney V. Webb, Clarence H. White, John M. Whitehead, S. H. Willard, Rev. H. H. Williams.

LONDON LETTER

CARINE AND WILL A. CADBY

Mr. Furley Lewis, the president of the Royal Photographic Society, has an exhibition of portraits at the Camera Club. It is not too much to say that some of the best portrait-work done in England is on view. Most of it is technically flawless and artistically distinguished. Mr. Furley Lewis has done a fine work for photography, as he is one of those who have raised the standard of portraiture and who show its possibilities to reveal more than the mere surface of the sitter. Our invitation-card stated that we were invited by Mr. and Mrs. Lewis to a private view on November 1, and promptly at four o'clock on that day one of us arrived at the Camera Club. There seemed to be a little hesitancy on the part of the official who received us, and he referred to the rule that forbids ladies to enter in the afternoon. But we protested; were not rules relaxed for a private view? It seemed so, for we were admitted. But, alas! where was the gay private-view crowd? Three somewhat injured-looking members were sitting reading, and, except for the intrusion of the feminine representative of "The London Letter," they had the photographs all to themselves. Naturally, we tip-toed around and made a hasty retreat; for evidently there was a mistake somewhere, and this must be our excuse for not giving the exhibition more space.

Sven Hedin's book, "With the German Armies in the West," has lately been translated into English, and it is the photographic illustrations, of which there are a great number, that will interest our readers. These strike us as extraordinarily bad. We all know that Sven Hedin is a great explorer; but he certainly is a very poor photographer. There are several architectural subjects taken in Belgium, and in most of them the perpendicular lines of the structures run towards each other at the top. This is even the case with an interior of Malines Cathedral, where the beautiful columns are made to lean inwards in a most eye-straining manner. One would have thought that a truthful portrait of the havoc wrought by German shells would have been sufficient, but Sven Hedin has added technical horrors of his own. Again, in his "set pieces"—mostly photographs of soldiers supposed to be engaged in the absorbing and awful work of actual fighting—we find very little that is convincing. In one of these, called "Gun-Crew Getting Ready to Fire on a British Destroyer," we are shown some sailors posed around a gun in the most approved photographic attitudes. All but one are staring at the camera, and as the gun is pointing in exactly the opposite direction the effect is ludicrous. Now we know from personal experience that posed photographs can, and often do, represent a subject more truly than snapshots of the real thing; but the models must enter into the spirit of the enterprise, and the photographer needs to work a good deal harder than Sven Hedin evidently did if pictures are to be saved from being comic when they are intended to be quite serious.

It may be interesting to note that the second in command of Stefansson's new venture into the unknown parts of the Arctic is a photographer, Wilkins by name, of Adelaide, Australia. He joined the earlier expedition without any previous experience, and proved to be one of its most valuable members.

A little book for children, called "The Dolls' Day," has just been published by Mills and Boon (Rupert Street W.). It is in a way somewhat of a novelty in three directions. First, there are twenty-nine full-page reproductions of photographs illustrating the adventures, which are told in a hundred-page story, of three dolls that come to life for a day. Second, these illustrations are reproduced on a matte-surface, cream-tinted paper — much nearer in effect to a direct sepia platinum print than the usual glossy halftone reproduction. Third, it is published at the "war-price" of eighteen pence.

It is only fair to confide to the reader that the writers of this letter are the joint authors of this little book, and that before publication both the story and the pictures were tested upon sundry small friends, not without success. Those who know children must have noticed their avidity for realism. We have observed a young miss of eight years stand politely cold and unconvinced before a beautiful drawing of a situation that should have been thrilling. But show her a *photograph* of a rabbit and a dog in actual confab, and the expression alters at once. If the same little girl is pressed for a reason for her interest in the photograph, she will probably say that she likes it because it looks so real it must be true. Of course, we grown-ups (especially the photographers among us) know the fallacy of relying implicitly on the truth of photography; but there seems no valid reason to disillusion the children. The sensible course is to take the hint that photography appeals to the youthful imagination, and put it in practice by using the process more widely in the illustrating of children's books.

ILLUSTRATION FROM "THE DOLLS' DAY" WILL CADBY

Messrs. Constable have just brought out a cheap edition (2 shillings) of "A Child's Day," first published three years back at 5 shillings, written by W. de La Mare and illustrated by the present writers, and the very fact of this reissue is, to a certain extent, proof of the popularity of photographs with children.

Most English photographers are familiar with the name of F. C. Tilney. He has always been a sound and conscientious though friendly critic of photography. Messrs. Dent are bringing out a book by him called "The Appeal of the Picture." Mr. Tilney, besides being a painter, has for fifteen years been engaged in art-teaching and art-criticism. His activities have been directed towards two classes of students — the scholar of the art-school and the pictorial photographer. Consequently his book, which is an examination of the principles of picture-making, will be as useful and necessary to the serious worker with the camera as to the painter.

This is the most important publishing-month of the year in London, which must be our excuse for devoting so much of our letter to books with a photographic interest.

The Camera

Fair women seek to chronicle
Their charms of outward grace,
While you in mood ironical
Depict a hidden face;
Or mark the wrinkle's stealthy path
Beneath the fingers of your wrath.

But when a baby comes to you,
By loving mother sent,
There 's nothing left for you to do
But swiftly to relent,
And place on record here below
The secrets which the angels know.

H. S. Haskins, in *The New York Sun.*

The Columbus Photo-Group

The Columbus Photo-group, one of the most recent photographic-coteries, held an interesting exhibition and meeting, November 12, 1915. Out of a total of twenty-eight prints, submitted by members, the Hanging-Committee passed upon and accepted nineteen prints, namely:

"Morning Sunshine," by Ward Amos; "Along the Creek Road," N. C. D. Martin; "Birches," W. P. Little; "Springhouse," J. W. Newton; "By St. Mary's," Florizel Smith; "The Edge of the Woods," "A Country Road" and "Beeches," Francis Herbert; "The Phillips Brooks Memorial," A. L. Kidd; "The Lily," "Snowbound," "The Brook" and "Poplars," P. V. Burington; "Sunshine and Shadow," Lawrence Randall; "The Bridge," Frank Hollowood; "The Lone Traveler" and "The Approaching Storm," E. B. Rowe.

At the December meeting there was an exhibition of color-photography by Messrs. Little, Henderson and Newton, a regular print-show, and criticism by the Hanging-Committee.

A commendable feature of this club is the novel method of criticism by a special committee appointed by the club, and submitted to members, so that they may be guided in selecting the best pictures for the annual exhibit for the year 1916.

At the January meeting the Secretary will submit a recapitulation of the work in 1915, showing in detail the number of prints submitted, the number of members present, the average attendance and the average number of prints at each meeting.

The outlook for the year 1916 is very encouraging, as the members are working together with intelligence, energy and harmony.

The B. Y. M. C. Union Camera Club Annual Show

The annual exhibition of photographs by members of the Boston Young Men's Christian Union Camera Club was held December 7-11, 1915. The display, which was very representative, was divided into five classes — Landscape, Marine, Portraiture, General and Genre. The quality shown was very creditable, and much of it was superior in originality and treatment to that of several professional members.

The awards, blue and red ribbons for first and second prizes, were made by a jury consisting of the leading two women photographers and an artist of Greater Boston — Miss Clarissa Hovey, chairman, Miss Mary Patten and Jean Oliver. The winners were: Landscape — F. W. Hill, M. L. Vincent; Marine — H. C. Shaw, H. I. Saunders; Portraiture — A. Hammond, M. L. Vincent; General — A. Hammond, H. B. Turner; Genre — H. I. Saunders, Louis Astrella.

Although a competitive exhibition in which prizes are awarded always causes more or less dissatisfaction among the contestants, it may be said that in this instance cordial good feeling existed among the members of this society on account of the awards. Nevertheless, it is our honest opinion, shared by other critics, that the jury did not appear to have exercised the best possible judgment, for Mr. Hill's successful picture — which showed a lack of experience in the use of the soft-focus lens — was surpassed easily by two other pictures by him; and Mr. Saunders' genre-picture — two little girls dressed entirely in white playing on the sand — was distinctly inferior to another picture of a little girl sitting on the beach, and which, on account of its decided merit, will appear in an early issue of Photo-Era.

Many of the pictures shown above bore evidence of hasty preparation, or no preparation at all, and were marked by absence of artistic composition. The injudicious placement and lighting of the human figure in landscape, the utter unfitness or incongruity of the costume (glaring white shirtwaists, hats or hair-ribbons), no sense of proportion, absence of true color-values and the adjustment of the picture-planes, multiple points of interest, are still marked faults that merit serious consideration from these careless workers. One finds such in every club. They need a helping hand from capable fellow-members.

The membership of the club is sixty-five at the present time, showing a marked increase over that of last year. The condition of the clubs evinces an energetic and wholesome activity, which augurs well for its future welfare.

American Photographer War-Nurse

Miss Lina Moritz, who attended the Illinois College of Photography in 1902, is now serving as a Red Cross nurse in the European War.

A Pupil of Daguerre Dies

Gustav Moses, the oldest photographer of New Orleans, died, October 23, at the age of 79. Born in Speyer, he came to America with his father when nine years old. The father had been a close friend and pupil of Daguerre, and taught his son the daguerreotype process as soon as he was old enough to work it intelligently. Most persons of prominence in Louisiana since 1849 have posed either for the father or son.

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Has any one seen Blue Beard?

FRENCH PHOTO-NOTES

The terrible events which so unexpectedly made a shambles first of Belgium and later of northern France very naturally interrupted the publication of all photographic and many other magazines in the French language. Normal business-activities of every sort were neglected, paralyzed or abandoned for the national defense. Poor Belgium! The last copy we received of the *Bulletin de l'Association Belge de Photographie,* always so welcome among our foreign exchanges, is dated June, 1914, and publication of the *Bulletin de la Société Française de Photographie* was also discontinued with the July issue of the same year. Although the latter periodical did not suffer the fate of its Belgian cotemporary, it became impossible to carry on the affairs of the *Société* because of the large number of members mobilized.

However, the last foreign mail has brought to us an issue of the *Bulletin Français* dated August, 1914, to November, 1915, and containing the encouraging announcement that the monthly meetings of the *Société* will be resumed, as well as the publication of the *Bulletin.* Nothing could more clearly indicate that affairs south of that fortified line known as "the front" are again assuming semblance of former times. Thus do nations accustom themselves to the exigencies of long wars.

This current issue contains much of interest to every Frenchman and, indeed, to the world, chief among the items, perhaps, being the brave showing made by photographers. Many members of the *Société Française* have joined the colors, including President Deslandres and Vice-presidents of the Administration-Council Lieutenant-Colonel Houdaille and General Joly, all of whom have rendered eminent service. Indeed, Lieutenant-Colonel Houdaille has recently been raised to the grade of commander in the order of the Legion of Honor. The Secretary, M. Cousin, entered the telegraphic service, and with the rank of Captain of Territorial Artillery has contributed important work for the aviation-corps. Also a studio-employee, Maurice Guédon, has utilized his knowledge of photography to good purpose in microphotography.

There have been casualties, too, and it is the intention of the *Société Française* to publish a *Livre d'Or* containing the names of all members mentioned in the orders of the day, decorated with the War Cross, Military Medal or the Legion of Honor, as well as those wounded or killed in the defense of their country. Prominent among these will be inscribed Jean Blein, professor of physics and chemistry at Louis-le-Grand College. As Adjutant of the Third Territorial Regiment he distinguished himself in the fighting about Arras in September and October, and later, as Sub-lieutenant at the head of a section of mitrailleuses in Flanders, met a glorious death while protecting the retreat of his men, gun in hand, because of an unexpected accident to their mitrailleuse.

M. Wallon, a member of the *Société*, mourns the loss of his son, an auxiliary physician, while caring for a wounded man in a first-line trench, under fire of the enemy. Two days after this news reached him he learned of the death of one of his nephews — an artillery lieutenant.

In the important and interesting task of preserving the pictorial history of the war for the schools, museums and government departments, which has been organized by the Assistant Secretary of the Fine Arts, under the direction of M. Pierre Marcel, photographers throughout France, amateur and professional, are taking part. Under government supervision motion-pictures are being made in action at the front which are being shown in France and neutral countries, including America, in aid of the Red Cross fund. Their splendid quality, educational value and realistic gruesomeness will serve not only as a unique, permanent record of the war, but will bring home to the world at large, as has never been done before, the real horror of modern warfare, and, so pacificists believe, provide the most potent of all arguments for the eventual disarmament of nations.

But there is much work for the amateur and local professional to do that is associated, if not directly concerned, with happenings at the front. The Minister of Public Instruction wants photographs of the ravages caused by the enemy; the Assistant Secretary of the Fine Arts wants photographs of historic monuments; the Minister of Public Works desires photographs of destroyed works of art that ought to be reconstructed; the Foreign Affairs Commission seeks records to prove German untruths; the Damage Commission can make good use of precise evidence of destruction done; the War Record-Office wants typical scenes of army-life — in a word, the general purpose is to compile a complete, authoritative, pictorial history of France during the war — a vast enterprise, requiring the assistance of every camera-user in the republic.

In response to the request of the Ministers of War and Public Instruction for interesting photographs of this general character, the *Société Française* offered its co-operation in gathering, classifying and filing them under the direction of M. Lagrange, General Secretary of the Society of Amateur Photographers of the Touring Club of France. A circular signed by the President of the Administration-Council, General Sebert, was sent to each member, asking him to do his part by procuring as many subjects as possible from amateur camerists of his acquaintance. Also the studios and darkrooms of the *Société* building, which had previously been given over to the manufacture and storage of photographic supplies for the military aviation service, were placed at the disposal of the government for this new work, and branch offices have been opened in the principal cities of France to receive the material from local sources. Thus has been put in operation a gigantic work, which is bound to be of inestimable value to future generations.

French Photographic Exportation Prohibited

Photographic plates and printing-papers are included in the list of articles which by French Presidential decree have been prohibited from exportation and re-exportation from France. There is a provision, however, that exemptions may be obtained under certain conditions, and it is because Messrs. Lumière have obtained such an exemption that Autochrome and Sigma plates are now available as usual through the American importer, R. J. Fitzsimons, 75 Fifth Avenue, New York City, who also announces the publication of a new catalog of Richard's Verascopes, Taxiphotes and accessories, including a very complete line of stereoscopic goods.

A New Optical Factory

Lacour-Berthiot, the well-known French optical house, is building a very extensive new factory for the manufacture of high-grade lenses and other optical instruments. Like the leading English optical firms Messrs. Lacour-Berthiot are engaged upon the execution of heavy war-orders.

WITH THE TRADE

Denying an Ica Rumor

November 26, 1915.

Wilfred A. French, Editor of Photo-Era;
Boston, Mass.

Dear Sir:

There seems to be an impression in the minds of some people — due to a persistent rumor, which apparently has sprung from nowhere — that the Ica Company has either gone out of business, or is soon to do so. We have never, heretofore, taken notice of this rumor, except in one instance, where we had the pleasure of damming up one source of such misinformation. The latest rumor is to the effect that there is at this time a representative of Messrs. Ica in this country, who is about to wind up the affairs of the International Photo-Sales Corporation.

As we consider this rumor derogatory to our interests, and as it is possible that many of your readers are under the impression that they will no longer be able to obtain our goods, we are asking you not alone as a matter of courtesy, but as a matter of justice, to print in the columns of your valued magazine this very emphatic denial of any adverse action in regard to this company.

Like most rumors, this particular rumor probably originated through circumstances misunderstood by those not in close touch or sympathy with the affairs of this company. As a matter of fact, the International Photo-Sales Corporation has been placed in a better position to offer the products of Messrs. Ica and other importations to this country after the European War than it ever was.

Last May, in anticipation of the urgent need of better facilities with which to meet the ever-constant and growing demand for Ica cameras and accessories, we moved to larger and more commodious quarters at No. 11 East 40th Street. In addition, we increased our sales-force, and it will be only a very short time before further changes for the betterment of our business will take place.

To deny that our business has not suffered by the conditions now existing in Europe would be absurd. Every merchant who imports, or uses in his business goods imported from abroad, has suffered to a very material extent, and we offer no apology in this direction for circumstances over which we have no control. We claim, however — and we believe that our claim is a just one — that so far as the importation of photographic goods is concerned, we have been very successful, and have received more shipments than most of our competitors, and we have the further assurance from our factory that advantage will be taken of every possible channel through which goods can possibly reach us.

Many of your readers are no doubt under the impression that the fame of Ica cameras is centered in two or three models, such as Icarette models A and B, Ideal, Minimal, etc. This is quite wrong, as Ica efficiency is just as apparent in the entire line of 43 models. We have a stock of cameras, which, while admittedly below normal, is worthy the consideration of those of your readers who prefer the niceties of adjustment and perfection of mechanical detail, which are the hall-marks of Ica quality; and if they will write to us direct, we shall at all times hold ourselves willing and in readiness to tell them the proper camera for their particular requirements. Personal service to the consumer is one of our policies, grounded in the foundation of a business which has steadily grown to admirable proportions, and which, by reason of our direct appeal to the consumer, and the quality of the House of Ica in back of us, we expect to see grow evermore in volume, as more people recognize the matchless beauty of the products we import.

It may not be generally known to your readers that we are the importers of a famous English camera, made especially for us, which is sold under the name of the "Ipsco Reflex Camera." We also represent an American motion-picture camera, the "Kinograph," which, for the money, we consider the most practical on the market to-day. With these various representations, you can readily see that the rumors of the discontinuance of our business-activities about which we write you are entirely without foundation. We do not feel that the rumors were sent abroad by any one with a vicious desire to hurt our standing in the trade, but we do believe that our failure to refute these remarks and to state that they are entirely baseless, and without any foundation in fact or truth, would result in a general misunderstanding of our real status.

In conclusion, it may likewise interest your customers to know that Messrs. Ica are working with almost a normal force of employees in an endeavor to fill all their orders. True, a great deal of this activity is due to the home demand; nevertheless our interests, as you can readily imagine from what we have stated above, are not being overlooked, and your readers will do well to keep in personal touch with us, in order that they may obtain what we are sure they desire at all times, the very best in photography — and the very BEST means "IPSCO." Very truly yours,

International Photo-Sales Corporation.
John L. Curley, *Secretary.*

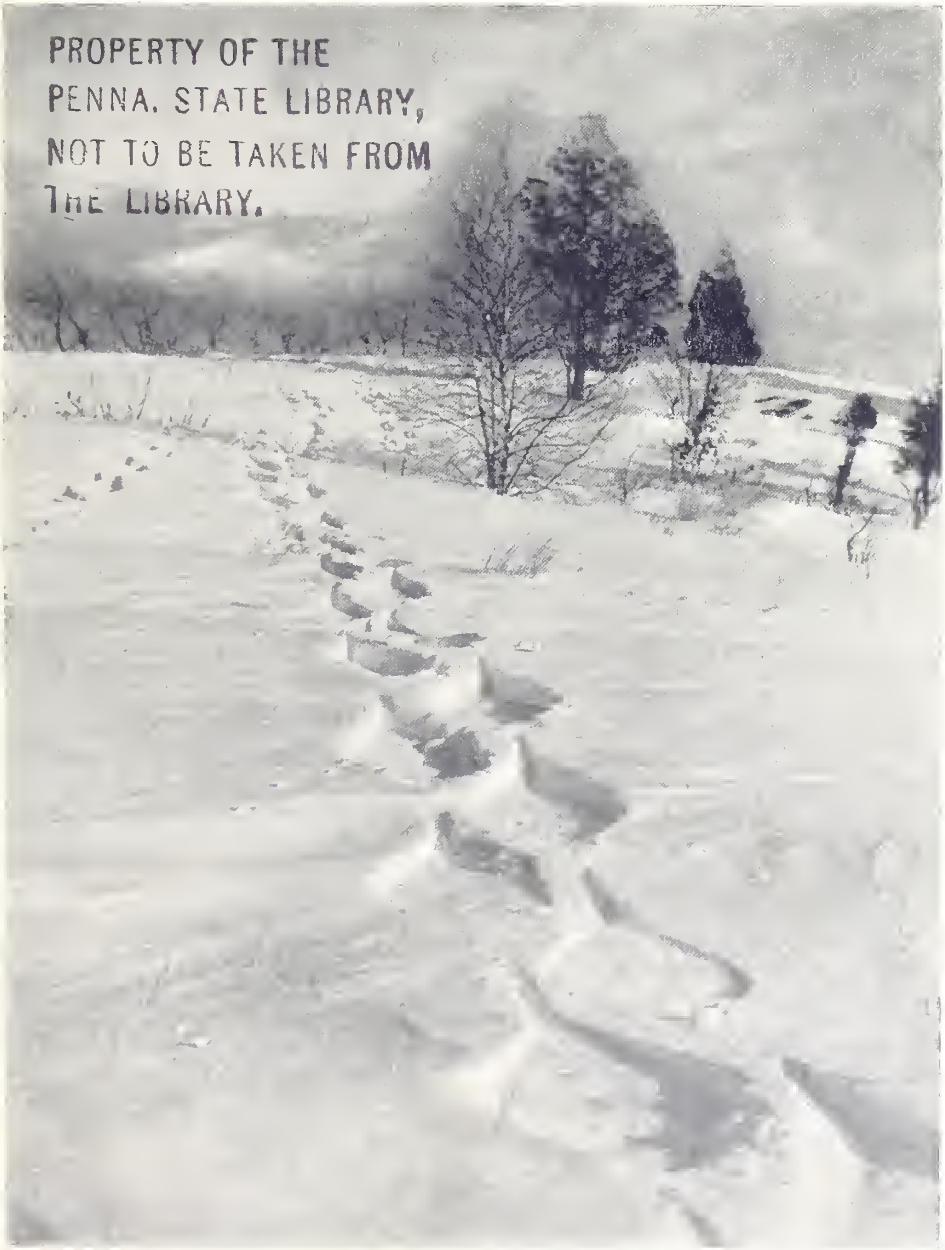
The Harvey Exposure-Meter

Another exposure-meter has just been placed on the market, and one which compares favorably with its predecessors in design, workmanship and subject-matter. The Harvey Meter is so well illustrated in the advertisement on another page that description here seems unnecessary except to emphasize the fact that it is of celluloid, neatly printed, of vest-pocket size, both faces being used in connection with two sliding scales. Exposures for all stops and classes of subjects are given without resetting or making calculations. The subject-matter is based not so much upon current theory as actual experience, for Mr. Harvey has been an extensive traveler and has kept records of his experiences as a guide. While in some instances the times given seem rather long, they are in accord with professional practice, and will surely yield good results. There is a quick adjustment for different latitudes, so that the meter may be used with equal success in any part of the world. The matter of the hour of the day is quickly disposed of by the advice to double the time in the early morning and late afternoon, and the further statement that it is impossible to have intense sunlight at such times, although faint sun, even bright sun, might be possible. In other words, a correct estimate of the light takes care of the hour of the day. The meter costs only $1.00, no more than two spoiled films of average size.

FEBRUARY 1916 15 CENTS

PHOTO-ERA

The American Journal of Photography



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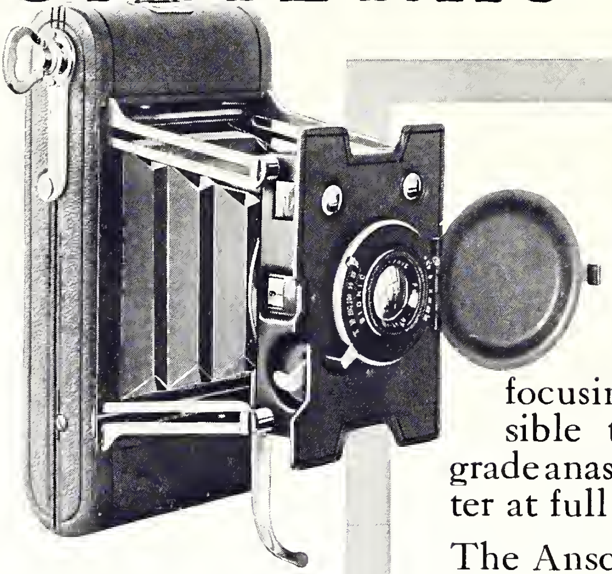
CAMERAS & FILM



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The Sign of the Ansco Dealer

ANSCO COMPANY
Binghamton, New York

Contents, February, 1916

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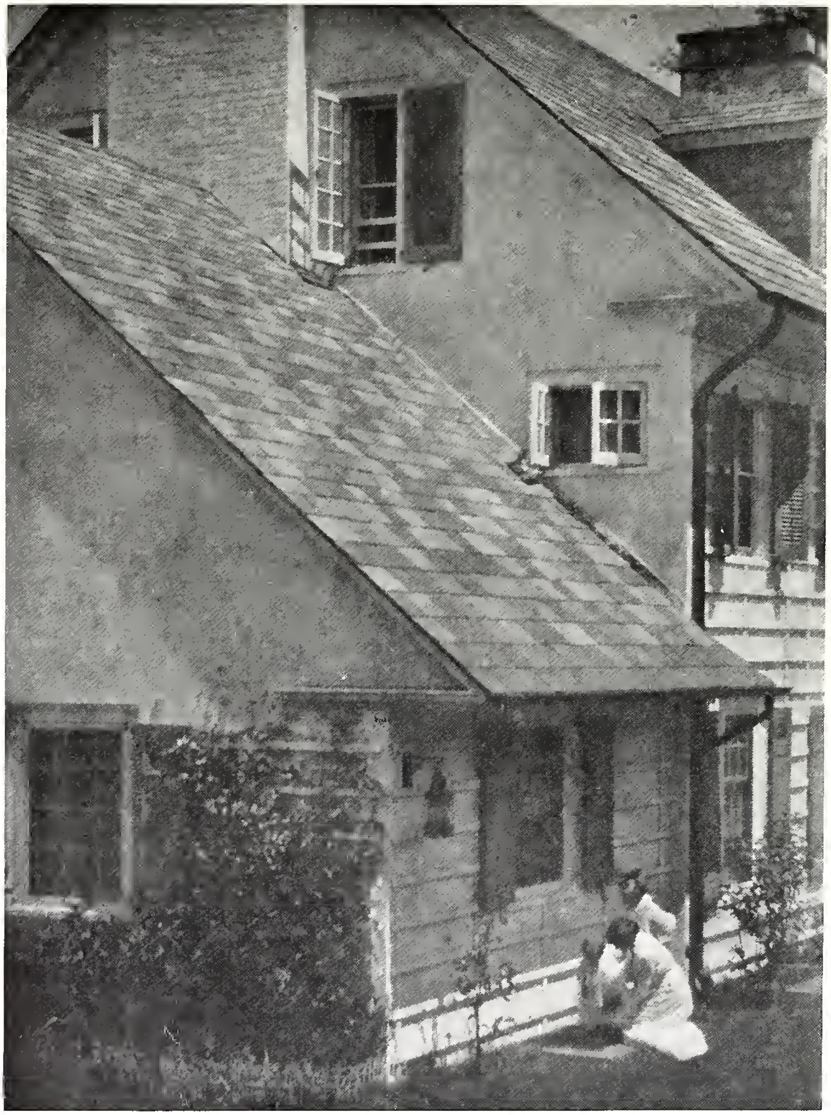


ROOFS
JOHN WALLACE GILLIES

PHOTO-ERA

The American Journal of Photography

Vol. XXXVI FEBRUARY, 1916 No. 2

Pictorializing

JOHN WALLACE GILLIES

PICTORIAL photography, to be quite precise, consists in getting the utmost in picture-quality into a photograph by any means whatsoever. It does not follow that pictorializing consists in making a fuzzytype with one of the best soft-focus lenses, for no amount of diffusion will save a picture which, to begin with, lacks in the essentials. A picture can be made with any lens, although it certainly is far easier to make one with a soft-focus lens. The man behind, however, is greater than the lens, no matter how good it may be, and if the desire exists to make a picture the tools will adapt themselves and the pictures will be made somehow.

A short time ago PHOTO-ERA published an article on a method of composition in pattern (May, 1915). As I think it over, the article failed to point out that the desire to create is, after all, the shortest road to pictorial quality. Given the desire, the article on pattern becomes pertinent; without it, the pattern-method of composition is useless. Then it would seem that "pictorializing" must be accomplished as the result of a definite mental point of view, desire or stimulus. The desire, then, is the shortest road. How can it be created and fostered?

Without doubt many beginners say to themselves that it is their earnest desire to make such lovely pictures as we see published in the various photographic magazines. That is the beginning — appreciation; but "the road is long, hard and dusty." Pictures do not come in a day.

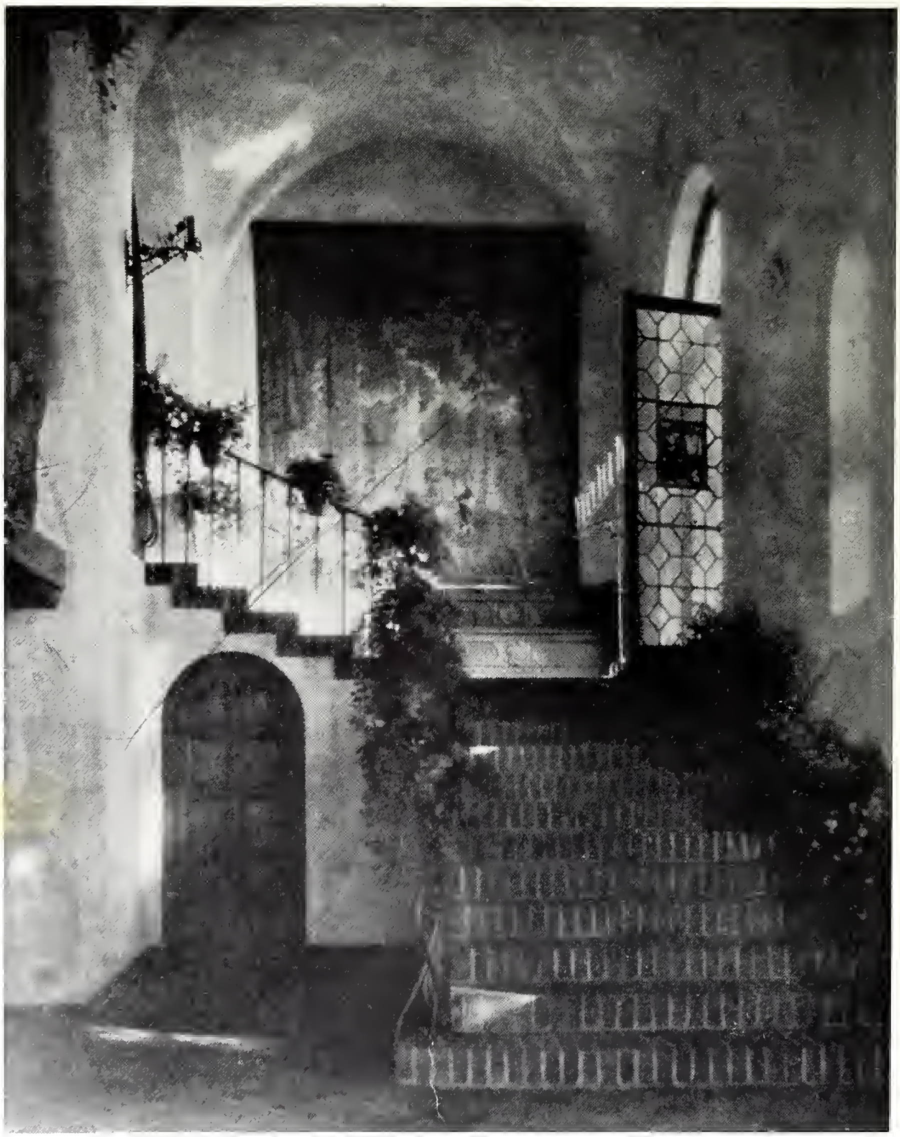
Perhaps one of the best methods to gain the feeling for pictorial quality is to use altogether the soft-focus lens, and try in that manner to accomplish a sense of mass, spacing and line-design. It is almost impossible to get an appreciation for these three great essentials by using a corrected lens. The intricate detail is so distracting that a proper sense of the greater elements is not gained. After using the soft-focus lens for a matter of two or three years, it will be found that the feeling of mass, spacing and line has so become a part of the senses that unconsciously one will compose a picture with feeling, using any kind of lens, and giving due regard to these essentials, and no feeling for the minute detail which formerly prevented the proper composition of the picture. It sounds rather peculiar to say that one can use a corrected lens better after a few years' experience with the soft-focus lens; but it is so, especially in this case.

However, even this becomes secondary in the face of the fact that a mental craving is the shortest way to any accomplishment, including, of course, the making of fine pictures. This, as is pointed out, may be assisted by continual use of the soft-focus lens, but it is not the proper way to get there. One must foster the desire as if it were a sick baby, and presently the pictures will begin to show it. Appreciation of beauty, especially in form, must be accomplished before one can consistently make pictures.

It would seem, then, that the production of pictures is dependent upon an education in these matters of form, line and mass, and especially appreciation. That is quite true, and, being true, makes all the books on pictorial photography unnecessary. You cannot be taught; you must learn. No man who is crude and undeveloped in these delicate matters will ever make great pictures consistently. He may manage to make a picture, but there will be no others to follow it. So it would seem that the shortest road to pictures is not what we imagined at first, nor even along the ways of photography, but is the hard high-road of general development of that spark, which exists in every man, of appreciation of finer things.

It seems strange to say that the best way to learn the making of pictures by means of photography is to turn your back deliberately upon photography and go to the study of art in its general forms. However, it is true. Art has touched photography only in few places. The greater portion of the workers are very busy copying down formulæ from the text-books, and are practising daily with a different developer and a different plate. Why must it always be so? Any developer is good if one becomes used to it; nearly any plate is good; and, I am sure, any paper is good. A good print on Azo is far better than a poor one on platinum; a good negative on a Stanley plate is more useful than a bad one on a Wratten; and any developer is far better than all others if once one knows it.

Why, then, all this pother about formulæ and plates and papers and methods. It takes us nowhere except backward. An attempt to use so many tools in so many different ways results only in confusion and a real knowledge of none. The technicians of photography deserve credit for developing a science which is delightful to get tangled up in, if your interest is pictorial. If there were in existence but one plate, one developer, one kind of paper, one camera and one lens, and the last a soft-focus, there would be three times as many picture-makers.



A STAIRWAY JOHN WALLACE GILLIES

A STUDY IN DESIGN JOHN WALLACE GILLIES

Sepia Tones Up to Date

E. J. WALL, F.R.P.S.

THERE are three distinct processes for the production of sepia tones: first, by direct development; secondly, by redevelopment; and thirdly, by the use of the hypo-alum bath, hot or cold as preferred.

With regard to the first, I think we may dismiss it at once as impracticable with development-papers — a term which includes both bromide and gaslight papers. I do not propose to consider printing-out papers, for they seem to be of minor importance in practical work. So far as I know the only method of obtaining sepia tones by direct development with any paper on the market is by the use of sulphinol, a developing-agent of French origin, of which I do not believe there are ten pounds in America. This, however, will give sepia tones direct and not black, because the oxidation-product of the developer is precipitated *in situ* with the silver of the image, and as the color of the oxidation-product is a bright orange, we have: black + orange = sepia.

I am aware that so-called sepia tones are obtainable by variation of the exposure and addition of more bromide to the developer with some papers — but my experience is that if regularity of results is required this method is out of court. It requires fresh developer for every third print. The reason for this is that as most of the development (gaslight) papers are unwashed chloro- or chlorobromide emulsions, the unwashed-out chlorides diffuse into the developer with every print and therefore act as restrainers and alter the color of the resultant print.

The first point to consider is, what is sepia? So far as I can judge there are about a dozen colors which are called sepia, some tending distinctly towards yellow, others toward blackish orange and still others having a distinct shade of green. Every operator must be his own final court of appeal, and when he strikes a color he likes and calls sepia, then my advice to him is to stick to that particular method of working and get it every time.

The so-called redevelopment process is one of the most unsatisfactory that we have, in my opinion. But before we enter into practical details it would be as well to consider exactly how we obtain sepias. Our primary image is metallic silver — black — in a finely divided state, and in the redevelopment process we convert this into a silver haloide, either the chloride, bromide or iodide, and then convert this into silver sulphide. We might represent the chemical reactions as follows:

(1) $2Ag + 2Hlg = 2AgHlg$

Hlg stands for one of the halogens, bromine, chlorine or iodine.

(2) $2AgHlg + X_2S = Ag_2S + 2XHlg$

in which X stands for a monovalent metal, such as sodium. Now we have no proof that the silver haloid exists as pure silver haloid. The weight of evidence is against it, and we have no proof that the silver sulphide is normal silver sulphide — certainly it is not in the same physical condition as when precipitated in a test-tube.

But we need not enter more deeply into the chemical questions. We have our black silver image, and silver sulphide is a deep blackish brown. If a deep black-brown is distributed in a very fine thin film on white paper it will become a comparatively bright yellow, and if we distribute this yellow on a more or less black image, or precipitate it in a more or less coarse form, then we get sepias.

Many workers prefer the development process, and many have written on the subject, giving us innumerable formulæ for the bleaching- and redevelopment-agents, such as sodium, calcium, potassium, barium and ammonium sulphides. A few — and very few — have recognized that the final tone of a redeveloped print is dependent on the first development. It is immaterial what the first developing-agent is. It is the stage to which primary development is carried that matters. A fully exposed print developed for a short time will never give a satisfactory sepia on redevelopment. One has to hit the correct exposure and develop as long as possible till there is, when the print is as it should be, complete arrestment of the developing-action. I do not purpose to enter into a full discussion of this point, because so far as my experiments and microscopic examination of the images have gone it is dependent on the size of the silver complex forming the photographic image.

Certainly one has to develop much longer than for a black-and-white print; that is to say, at the completion of the primary development the print must be much darker than it should be were it considered only as a black-and-white print. The reason for this is that all the sepias are much more luminous or transparent in the shadows than black images, and a black print which is correct in tonality will when redeveloped appear weak and washy.

Many operators recommend a complete bleaching of the print, but I think that this is a mistake. I have never yet obtained what I call a good sepia when the print has been completely bleached; the colors always tend too much toward a dirty mustard color. The most satisfactory color that I have obtained is by considerable overdevelopment, so that there is absolutely no white visible, then a very slight bleaching, just enough to make the gray tints of the highest lights disappear, a thorough washing and then redeveloping. I thus obtain a bright yellow image superimposed on the primary black image, and the result is a very satisfactory color.

I favor one of the following:

A

Potassium ferricyanide	20 grams
Potassium iodide	5 grams
Water	1,000 ccs.

B

Potassium ferricyanide	25 grams
Sodium phosphate	115 grams
Water	1,000 ccs.

The latter is preferable and was suggested by Greenall, in 1912, but the print must be bleached more than with A.

There has been considerable discussion as to the washing of the prints, and whilst it is possible to place them, with a mere rinse, into the redevelopment bath the color obtained is too warm. On the other hand, too long washing gives flat washed-out looking prints; about ten minutes in running water is enough.

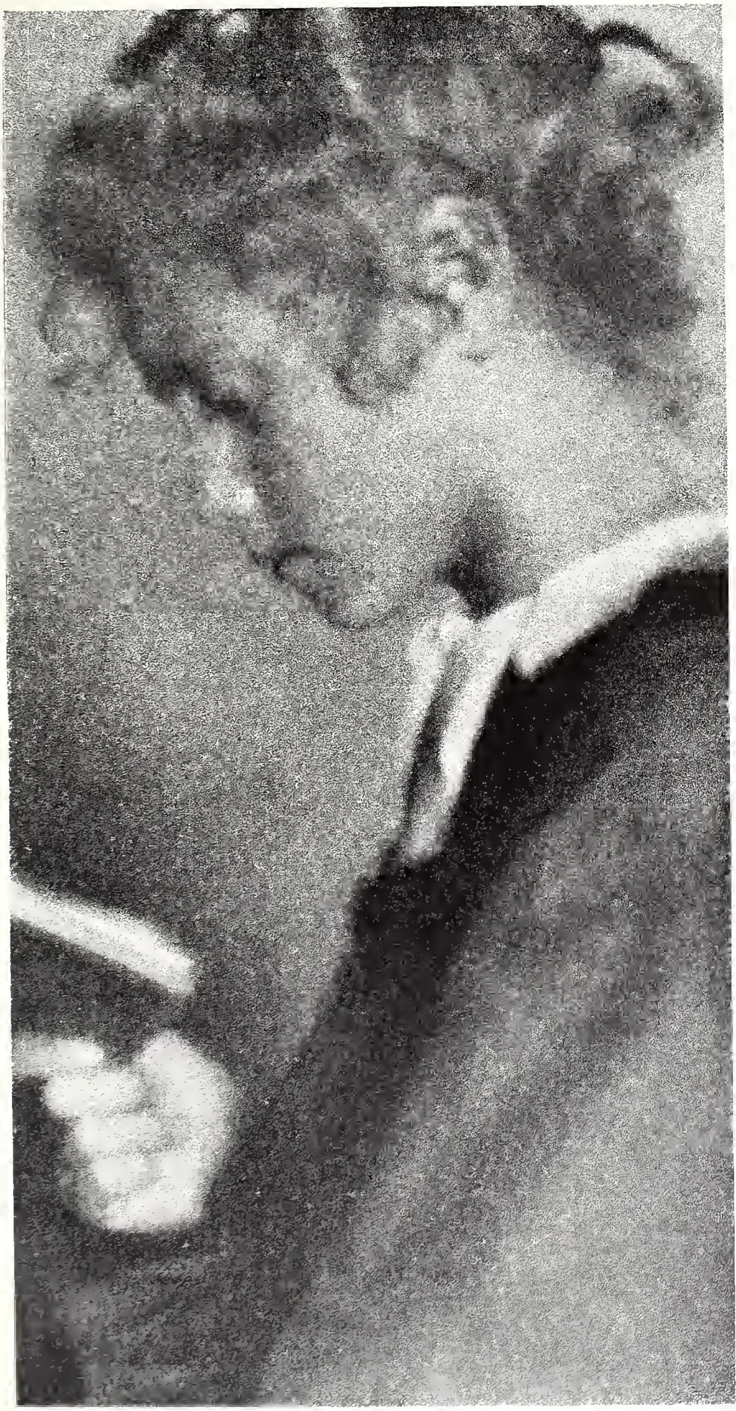
Of all the reagents recommended for the redevelopment bath sodium sulphide is after all the most satisfactory. The bath is made thus:

Sodium sulphide	30 grams
Water	1,000 ccs.

It may be prepared as a stock-solution, but it must be kept in the dark in a stoppered bottle with a well-greased stopper:

Sodium sulphide	330 grams
Sodium sulphite, anhydrous	65 grams
Water	1,000 ccs.

This solution is sensitive to light. For use, mix one part of the above with nine parts of water.



THE HOME-LESSON
JEANNE BENNETT

The hypo-alum bath is far more certain in its action and gives pleasanter tones. There are practically three types of baths: one containing alum, another with aluminum chloride and an acid and the third containing gold. The last is the most satisfactory.

A

Hypo	125 grams
Alum	62.5 grams
Water	1,000 ccs.

Dissolve the hypo and add the alum slowly, with constant stirring, and boil for ten minutes, then cool down and add

Silver nitrate	2 grams
Water	15 ccs.
Salt	2 grams
Water	15 ccs.

Mix these before adding to the above, and finally add

White sugar	50 grams

The temperature of the bath should not exceed 120° F.

B

Hypo	125 grams
Water	1,000 ccs.

Heat, but do not boil, and add

Citric acid (in powder)	40 grams

Allow to cool, and add, previously mixed together:

Silver nitrate	2 grams
Water	15 ccs.
Aluminum chloride	5.5 grams
Water	15 ccs.

The temperature of the bath should not exceed 110° F.

It has been stated that this bath should be filtered when cold, and only the clear portion used, and that then there is no chance of sulphur-deposit on the prints, and that better tones are obtained. On trying this out several times I have found that the clear solution always turns milky on heating — as was to be expected.

C

Hypo	125 grams
Alum	16 grams
Water	1,000 ccs.

Boil for a few minutes and add

Sodium phosphate	16 grams

The bath should be alkaline, and if not enough sodium carbonate should be added to make it distinctly so, and then allow it to cool. Then add, previously mixed:

Silver nitrate	2 grams
Water	15 ccs.
Salt	3 grams
Water	15 ccs.

Stir well and add

Gold chloride	0.26 grams
Water	30 ccs.

The gold solution should be added just before use. The temperature should be from 120 to 125° F. The above quantity will tone 945 square inches of prints.

With both A and B baths it is absolutely essential to hit the right color of the primary image, and for purplish tones this should be a full black; but for real browns of the sepia type then a fuller exposure must be given and more bromide added to the developer, so as to obtain distinct olive tones in the primary image. With bath C there is no need to vary one's ordinary practice, except to develop rather further than usual. Undoubtedly there is some gold toning with this, and one can judge of the final color of the print by looking through it. The use of the gold was first suggested by the Artura Photo-Paper Company, and it is a great improvement. They recommended that the prints should be fixed again after toning for five minutes, and finally washed.

I have carried out a great many experiments with this and other baths recently, and have found that there is great latitude in working with all of them. For instance, with bath C the omission of the subsequent fixing I have not found to give — so far — any ill effects. Prints were placed direct from a plain hypo-bath into this, and some were well washed, and immersed without fixing, into all three baths, and I have been unable to detect any difference in the finished prints. Others were placed direct from an acid fixing-bath into A and B, and here there was a slight loss of intensity — especially in the highlights.

Apparently C is the only bath sensitive to temperature, and a cold bath gives far too purplish a color, whilst too hot a bath gives yellowish sepias. Every operator must determine that particular temperature which gives him the particular tone that he desires, and it is as well to make a series of trials, letting the temperature range from 100 to 125° F., and to keep the results for reference. With the other baths variation of temperature merely means quicker or slower toning; a really cold bath, 65° F., will generally take about sixteen hours, whilst one at 120° only about twenty minutes.

Just one bit of advice — never take a print out of a hot bath and drop it straight into cold water. If you do, in nine cases out of ten you will get blisters. Let the prints cool off first.

Really to exhaust this subject, which, as the Editor says, gives rise to considerable discussion, would absorb rather more space than he would like, with the only result that any inexperienced amateur might repeat every experiment and obtain a result which he might claim was absolutely contradictory to my statements. There are no standards, and therefore "what is one man's meat is another man's poison." My advice is that every worker should try out the various methods and, having found one that gives him the color that he wants, to stick to that procedure.

There are possibly some variations of the above processes which may be of interest, and these I will outline briefly: first, a direct toning-method in which the print is immersed without any bleaching in a sulphiding bath. After development, fixing and washing, it is immersed in a ten-percent solution of formalin and washed briefly and then immersed in a bath of

Liver of sulphur	7 grams
Ammonia water	q. s.
Water	1,000 ccs.

Enough ammonia should be added to make the solution smell distinctly.

In this the print takes on a rich purple tone, tending to brown, but it is not a sepia, nor have I been able to obtain what I call sepia by this process.

Again, all sorts of tones may be obtained by adding small quantities of metallic salts, such as mercuric and cupric chlorides, to the bleaching-baths and then sulphiding. Again the addition of varying quantities of Schlippe's salt (sodium sulphantimoniate) to the sulphiding-bath will give as great variations of color as even a chameleon could desire; but in all cases one must adhere to one rigid line of work if regularity of tone is required.

By far the most striking variation of the sulphur toning-methods is that suggested by Lumière, in which no change of the primary image is visible in the actual toning-bath, and only makes its appearance during the washing. The disadvantage of the process is that one has to make a preliminary series of tests and records of the times and temperatures to ascertain the color obtainable by any given procedure and then follow this rigidly in practical work:

Hypo	125 grams
Yellow dextrin	125 grams
Hot water	1,000 ccs.

Just before use add to the cold solution, temperature 70° F.:

Hydrochloric acid, strong	50 ccs.

The solution should be opalescent but not milky, and the prints may be immersed in this with but a slight wash after fixing. No change is seen in the color of the print; this is developed only during the subsequent washing, which must last from one and one-half to two hours.

The chemical process involved is probably the formation of colloidal sulphur and also some sulphurous acid, and these attack the silver image. Lumière and Seyewetz give the following equation as explanatory:

$$2Ag + S + H_2O = Ag_2O + H_2S$$
$$Ag_2O + H_2S = Ag_2S + H_2O$$

It is quite possible that silver oxide is formed, but the final product is silver sulphide.

The final color of the print is dependent on the duration of immersion in the bath, and ranges from a warm brownish black to sepia. A difference of five minutes' immersion, or five degrees in temperature, will make considerable difference in the color. Ten minutes at 70° F. will give a warm black, fifteen minutes a warm brown and twenty minutes a warm sepia, and so on. The bath will not keep more than two hours after the acid has been added, but the hypo-dextrin solution may be kept indefinitely. This method is well worth a trial.

Another modification is the single-bath sulphide toner, suggested first by Milton Punnett, in 1907:

Sodium sulphide	50 grams
Ammonium sulphocyanide	100 grams
Ammonia water	q. s.
Water	1,000 ccs.

Without any bleaching, bromide and gaslight prints assume in this a pleasing purple-brown color in about five minutes. Another bath on similar lines, which gives sepia tones, was suggested by G. E. Brown, Editor of *The British Journal of Photography*, in 1910:

Sodium sulphide	80 grams
Potassium ferricyanide	40 grams
Water	1,000 ccs.

Dissolve each salt in half the water, mix and stir till the solution clears, then add

Potassium bromide	20 grams
Water	200 ccs.
Glacial acetic acid	150 ccs.

Stir till the precipitate dissolves. The well washed prints should be immersed for ten to fifteen minutes for a very fine brown tone.

For some special subjects, particularly sketch- and child-portraits, the colors obtained by gold toning of a sulphided print are much admired by some. They are bright red or carmine. This process was first suggested by Wellington & Ward, in 1907:

A

Gold chloride	2 grams
Hot water	1,000 ccs.

B

Ammonium or potassium sulphocyanide	12 grams
Hot water	1,000 ccs.

Add A to B slowly, stirring continuously. The prints must be well washed prior to immersion in this bath. Toning will take about ten minutes, and the above quantity of gold will tone about 1,400 square inches of prints.

Personally I prefer the following bath as giving purer colors:

A

Gold chloride	1 gram
Water	225 ccs.

B

Thiocarbamide	3.25 grams
Water	225 ccs.

C

Sulphuric acid	5 ccs.
Water	200 ccs.

For use mix

A	100 parts
B	100 parts
C	100 parts
Water	1,000 parts

Prints should be left in this till the deepest shadows are toned through. The slightest trace of hypo in the prints will prevent toning.

In the above notes I have endeavored to reduce, within reasonable dimensions, some suggestions for obtaining other than black tones on development papers. To have presented a complete summary of all that has been published on the subject would absorb at least three or four issues of PHOTO-ERA. There remains but to discuss the question of the actual sulphide used for the so-called redevelopment process.

There is no particular advantage in any one salt; possibly ammonium sulphide excels as regards chemical stability, but as a matter of fact there is not one that can be said to be reliable. Sodium sulphide, Na_2S, is the one most used. It is one of the most unstable, unpleasant-to-deal-with salts that we have. It is in such loose chemical combination that one opening of its container-vessel will set in motion the processes of decomposition, which mean the formation of polysulphides and hyposulphites, that act unfavorably on the color of our prints.

Now there are two sodium sulphides on the market, the one the so-called technical, which contains a variable amount of sulphide, plus uncertain quantities of polysulphides, sulphites and hypo(thio)sulphites, and the pure salt, which should contain not less than 97 percent of sulphide. The latter is double the price of the former, but considering the small quantities actually used, price is of no moment. It is advisable therefore to use nothing else but "pure sodium sulphide for analytical work."

If the technical salt is to be used, then it should be dissolved in three times its bulk of water, and allowed to stand for at least a week in the dark, and the clear solution decanted from any precipitate that may form, which will be iron or other metallic sulphides, which cause inferior colors; but the sulphide plus sulphite solution given above is by far the best.

"THE AMERICAN MECCA," MT. VERNON, VA. CARL H. KATTELMANN

The Boy-Scouts

INA L. COOK

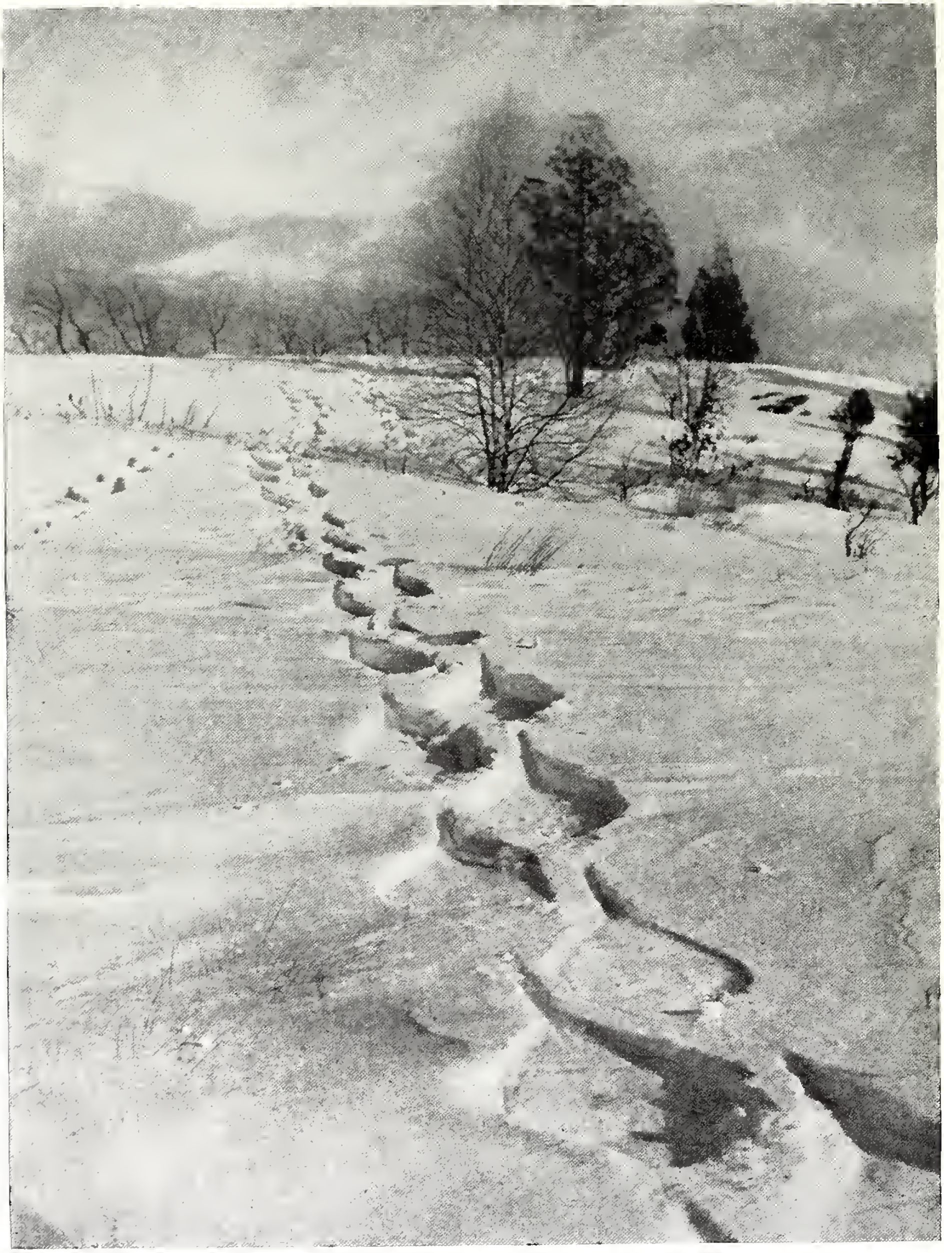
Photograph by Charles Z. Vaughan

Sleep on, O youthful hearts and brave,
   That hear not yet the call to arms,
That reck not yet of war's grim hate
   Or battle's loud alarms.

Sleep on and dream; the watchfires' glow
   Guards still the camp; while far away
Pale mothers kneel by empty beds,
   Stretch empty arms, and pray.

In pageant bright the fighting hosts
   March on to war's vain victories —
A harvest dread of blood and tears
   They reap — dream not of these!

God's grace encircles all the camp;
   His love sings in the coming dawn
The greater victories of peace —
   Sleep on, young hearts, dream on!



SNOW-SHOE TRACKS
D. F. BOYDEN

The Amateur Photographer

SIGISMUND BLUMANN

CONSIDERING the time I give to photography, and the wholehearted interest I take in photographers, the practical man is perhaps right in his estimate when he considers me a weak character. For be it confessed photography and photographers have brought me no money in all these years. But is not this money-gauge a sort of *reductio ad absurdum?* Is the practical man's opinion final? It would seem on closer scrutiny that life itself is not a matter of dollars and cents. In the degree in which all things are made to conform to a material valuation those things lose something — not always, but pretty generally. What is it they lose? Let each reader decide for himself.

What is said herein of the amateur photographer is true of the amateur in any of the arts. For fear I may overlook some of the good truths which justify others to do for love of the doing, without hope of profit, let me speak of the amateur photographer as one person — myself; not egotistically as worth the space, but as one evidence for the defense.

In me exists a yearning to make pictures. I cannot paint nor even draw. I love nature in "all her visible forms." The made picture pleases but cannot satisfy me. I feel an impulse to express emotions in pictures — emotions of my own in pictures made by myself. Since it is not given me to use the pencil or the brush, I use the camera. Nimrod had his way of seeking the remoter landscapes, but I abhor the gun. Walton loved the river's brim, but my taste is not for fishes, but for the sight of the river itself, and that alone. Let the cook serve the fish. Without injuring any of God's creatures I tramp the hills and explore the woods, quietly and peaceably, with a burden of some ten or twelve pounds of camera, plates and tripod. If it be on a Sunday then the blue dome of heaven itself is my temple, and I worship no less reverently in that the breeze delivers the sermon and the birds are my choir. In big silences I enjoy and expose my plates, eat my luncheon under a shady tree and with a glorious fatigue tramp home again, my game-bag filled, and happy in my catch, even though it be unprofitable.

But the darkroom has its charms, too. It is a part of home. Outside the red window I can hear my youngsters playing as I watch the black come out on the creamy plates. One of the kiddies falls, and I cover the tray and am out to offer help and consolation. When the good wife calls I can hear her, and if it be to dinner, I leave the negatives for the hour in the hypo and am ready to do justice to a home-cooked meal.

Eventually prints are made, and my friends are given, or say they are given, pleasure with the gift of pictures. The pleasure is none the less to them in that these pictures cost them nothing, and the expense to me has been repaid by the pleasure gained and the pleasure I like to believe has been given them.

It is all so peaceable, so peaceful. But with it there has come and grown an ambition to make works of art. I have studied the masters; have striven to make works of art. I feel that I have been improved. I try to improve myself that my work may be bettered. After a time there come associations with other kindred spirits who love nature, art, quiet, home and all the other things I love. Friendships are formed that count. How shall I enter these items in the account-book of my life? Shall I try to put a money-value on my highest enjoyments? Men, practical men of business and affairs, call me visionary, impractical and other things; but in the days of many years spent, when I might spare them from the necessary grubbing for a livelihood, in the open under the blue sky, I have never seen the dollar-sign appear in the firmament, nor heard the jingle of coin in the wildwood.

A man must eat and should work. I work not only that I may eat, but that those whom I love may eat. And they are well fed. My work is as well done as I can do it; and then what? Must my pastimes remain the most desultory and aimless of my efforts to be conceded as being pastimes? May I not make pictures and give them away in the hours through which the practical man gets his recreation at country-clubs? May I not spend on lenses and plates and paper a tithe of what he puts into hot birds and cold bottles? In justice to diverse views let us say that tastes differ. One man is very practical all day and spends his nights at tangoing or the poker-table; another is not the less practical who does his day's work conscientiously, and when leisure offers the opportunity takes his camera and goes afield, or locks himself in a darkroom to perpetuate his pleasure in a tangible form for the pleasure of others. The amateur photographer harms no one, gets and gives pleasure generously. He will usually be found a gentle person who loves, and is beloved by, his family. Is he so impractical after all?

Printing-In Clouds from Separate Negatives

WILLIAM S. DAVIS

UNDOUBTEDLY the ideal method for the pictorialist is to obtain suitable clouds in just the right location at the time the landscape or other outdoor-composition is photographed (provided, of course, the subject needs them); but the fact of the matter is that the camerist cannot always be on hand to take advantage of such perfect conditions, consequently in many cases the only way to supply the clouds is by recourse to "printing-in" from a separate negative. Although entailing more labor, this is not always a disadvantage in other respects, however, as the worker of trained taste can, given a fair stock of cloud-negatives, select what will exactly complete the lines of the composition or aid the impression it is desired to convey, which is better than taking any sort of clouds which may happen to fill the sky when the foreground is photographed.

Naturally, the worker who wishes to take advantage of the pictorial possibilities of double-printing must possess sufficient knowledge to select an appropriate combination, and also have a varied collection of cloud-negatives from which to choose. A large number is not absolutely necessary, however, as a dozen or two of the right kind will meet a wide range of requirements, so we will first consider the most useful types and how to photograph them.

The many variations of cumulous and stratus clouds are more often of value for pictorial purposes than others, both on account of their contours and the fact that they are most frequently seen. This latter point is worth noting, for however interesting it may be to record rare and strikingly odd specimens, they are not well suited to combine with an interesting foreground, on account of producing a division of interest, which is always fatal to pictorial unity.

As suggested by the name, cumulus includes practically all the rounded cloud-masses; but these are classified in sub-divisions, such as alto- and cirro-cumulus, often referred to as a "mackerel sky;" the castallato, or "double headers," which tower upward in white masses on quiet, warm days; cumulo-nimbus, a form of rain-cloud, etc. In clear, windy weather the clouds are frequently broken up into detached masses, which are then designated as fracto-cumulus, or whatever variety the clouds happen to be. Clouds of the stratus type spread out in horizontal streaks or layers, and these are very often seen in combination with other forms, such as a cumulus upon a stratus base, this formation most commonly taking place when the atmosphere is full of moisture and variable air-currents.

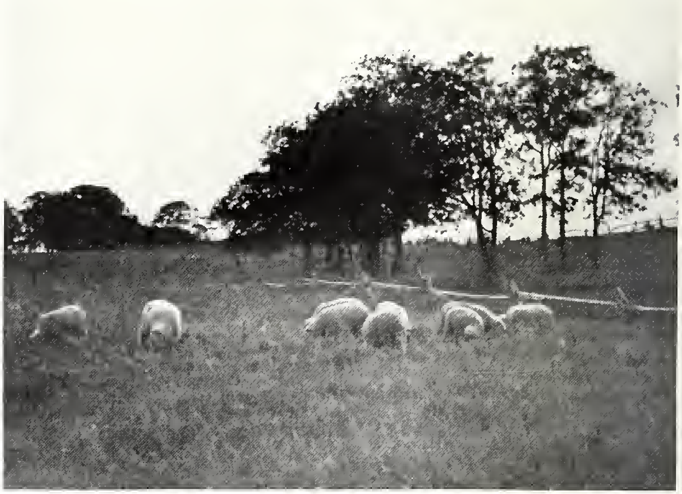


FIG. 1. A SKY NEEDED

In making useful sets of negatives one should aim to record the more characteristic formations under different lightings; i.e., with the sun falling upon the clouds from one side at different times of the day, with the sun behind during the forenoon and afternoon hours, and lastly good sunsets. The horizon-line should be just included in the negative, and free of any near obstruction, because when one wishes to print clouds into an open view with flat sky-line a true effect cannot be obtained by using clouds seen only at a higher elevation.

Orthochromatic plates or films should be employed, and a ray-filter of medium depth (say about 4-time) included in the outfit. It is also a good plan to use some sort of hood around the lens to keep off extraneous reflected light. Well-defined gray clouds, or light clouds seen against the sun, can, if desired, be rendered very well without using a filter. The exposures under such conditions would range from about $\frac{1}{25}$ to $\frac{1}{100}$ second with stop F/11 (U. S. 8), according to the time of day and year. All white clouds upon a background of blue sky, delicate filmy types, and strongly colored sunsets, need a ray-filter over the lens to produce satisfactory results. The average exposures at F/11 would then be from $\frac{1}{5}$ to $\frac{1}{10}$ second on such orthochromatic plates as those listed in Class 1 of the Photo-Era Exposure-Guide. Using a lens working at F/8, or faster, ray-filter snapshots of $\frac{1}{25}$ second can readily be made in summer. It is of course understood that the exposures mentioned refer to clouds alone, or with open water, for in most cases they would be insufficient for average landscapes with medium-dark foregrounds.

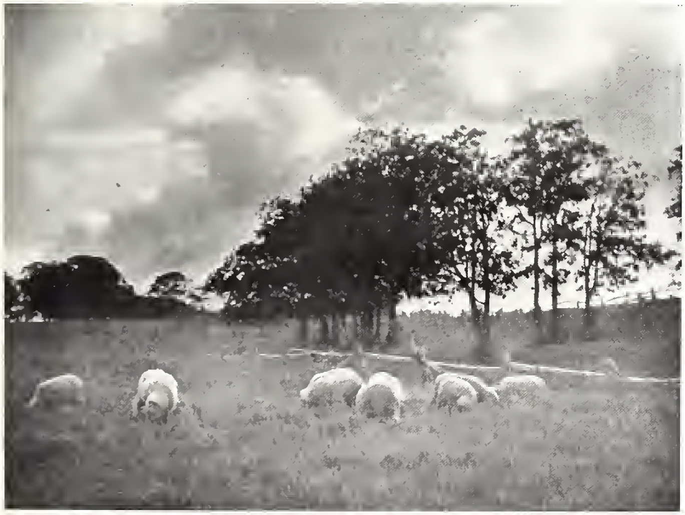


FIG. 2. UNSUITABLE CLOUDS

When making cloud-negatives the following details should be recorded — time of year, hour of day, direction of wind, direction in which the lens is pointed. While all these details may not be important in every case, one never can tell when they will be needed for reference; and for the same reason it is advisable to enter such data with landscapes which are likely to be used for combination-printing.

In developing clouds one should aim to obtain negatives of medium printing-quality, rather thin and soft, but not flat. Any tendency toward flatness, which might occur when dealing with very thin delicate forms, can be overcome by adding an extra amount of bromide to the developer and allowing the latter to act longer than the normal time.

While nothing will take the place of training and taste as a safeguard from bad combinations, the data mentioned above will provide a check upon such inconsistencies as the introduction of clouds lighted from the opposite side as the landscape, or, in a marine, having clouds driven along by a wind directly contrary to that which is propelling some sailing-craft! Sometimes such points can be corrected, however, by reversing the cloud-negative and printing through the back, for any slight diffusion which would result in the case of a glass plate would not prove detrimental.

Another feature to be considered is the use of morning-clouds with afternoon-landscapes, and vice versa, as certain changes occur in the formation of some clouds at different times of the day; consequently, if the subject clearly expresses the feeling of

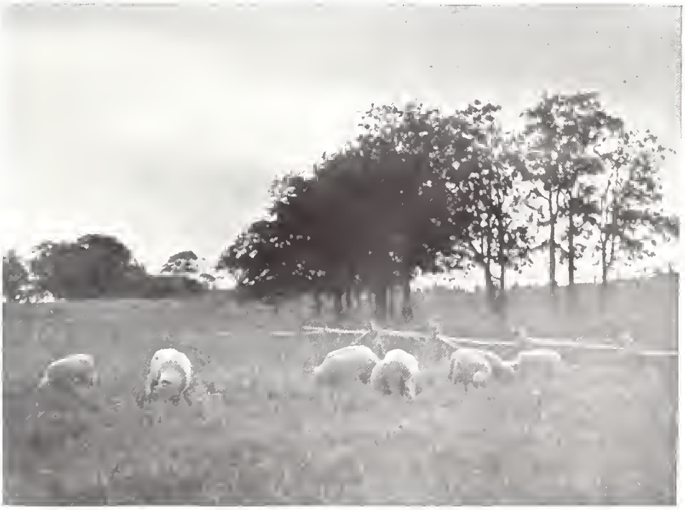


FIG. 3. A GRAY DAY IN THE PASTURE

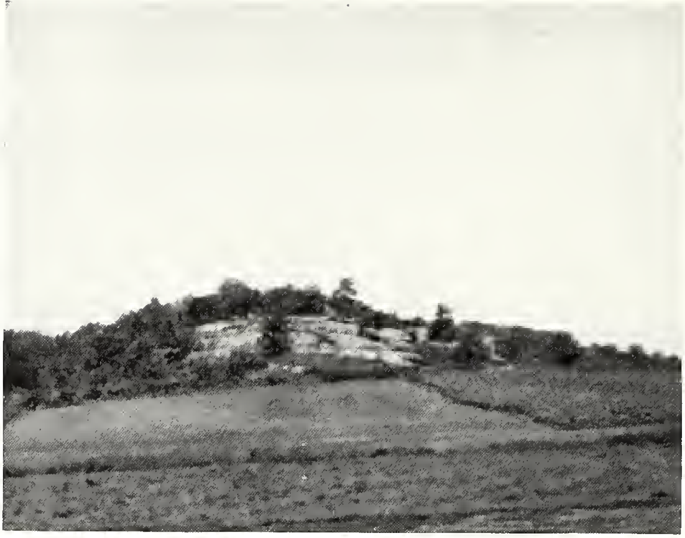


FIG. 4. ANOTHER SKY NEEDED

a certain time of day, any clouds used should be those taken at nearly the same hour. There are views, however, which in a photograph do not give one a definite impression of this kind, so with such it is permissible to use any clouds pictorially suitable which are lighted from a similar angle. For example, suppose a bit of landscape is taken at nine o'clock in the morning looking north; one might select clouds taken looking in the same direction at three in the afternoon, and by printing them reversed obtain the same lighting as that of the landscape. Naturally, there would be no object in doing anything like this if a suitable cloud-negative were available taken at the same time of day as the landscape; but with only a limited stock to select from such is not always the case.

When choosing clouds to fit a particular subject one must be guided both by the character of the view and the lines of the composition. A scene full of interest in itself, but showing a patch of blank, white sky out of tone with the rest, needs only a suggestion of delicate clouds to bring this portion into harmony without diverting interest from the principal part of the picture. On the other hand, an open landscape consisting of a few broad, strong tones with but little detail in the foreground to hold the eye will usually require a sky of sufficient strength and beauty to command a fair share of attention, and so complete the composition. The lines of the clouds, whether the sweeping curves of cumulous forms or horizontal streaks of stratus and cirrus, are often a valuable aid in restoring balance to a one-sided foreground-composition.

Just to indicate the need of careful selection I am showing the misfit combination of a cloud-formation that is good in itself. Fig. 1 shows a view that is certainly in need of a suitable sky, but in Fig. 2 the result is very unsatisfactory because the style of clouds chosen is too assertive, thus preventing concentration of interest upon nearer parts; also the contours of the clouds fail to help balance the rest, and lastly, to make matters worse, are printed too deep for this subject. Fig. 3, however, shows a very much better result, obtained by selecting soft, simple clouds which fill the space allotted to them in an unobtrusive manner, aiding the effect of repose. To prove, though, that the sky used in Fig. 2 is

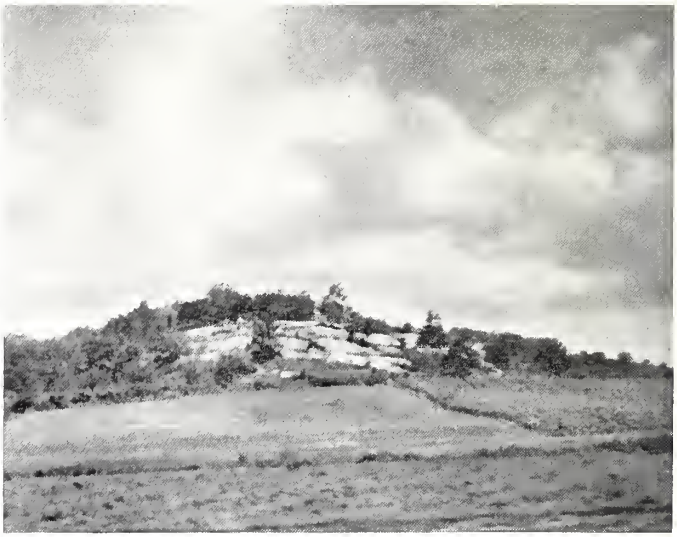


FIG. 5. THE SKY IN FIG. 2 USED PROPERLY

good in the right place, I am presenting it again in Fig. 5, where it is quite in keeping with the subject. The reason for this is, in a measure, explained by Fig. 4, which shows how much an open landscape of this sort containing a wide expanse of sky depends upon a bold, effective cloud-formation to give it pictorial quality.

In all cases one must preserve an impression of truthful tonality between sky and foreground, which is a matter of judgment as to the relative depth of printing allowed. A surprising variety of effects is possible by altering the time of printing, but the actual depth to which the clouds are printed naturally depends upon whether the rest of the picture is light or dark in tone. When in doubt it is better to keep the clouds a bit light, as such a defect is less objectionable than having them overdone.

The general pictorial requirements of the subject having been indicated, the next question to be considered is how best to print-in the clouds without showing where they meet the foreground-portion. As several methods are available I will describe the most practical ones, and leave it to the reader to select whichever seems best suited to the particular work in hand.

In the first place, the sky-portion of the landscape must be kept virtually white, otherwise it is obvious that light clouds which are printed in later will appear dull and flat in the highlights; consequently, if the sky of the negative is not sufficiently opaque to print as a blank it must either be shaded by a piece of card cut roughly to the shape of the sky-line, moving it slightly during the printing to avoid showing a hard line, or this portion of the negative blocked out in some manner. For most subjects shading is sufficient, as any slight tint which may show near the horizon as a result of this vignetting is often rather useful, because it permits the clouds to blend in a similar manner, thus preventing the appearance of a white line of demarcation. When, however, a subject has a very broken sky-line, with sharply defined edges, such as occurs with architectural details, shipping and such like, recourse is usually had to "stopping-out" with an opaque oil or watercolor, applied with a soft brush. Some prefer to outline the details with a fine pen and India-ink, and then block out the rest with regular photographic opaque, or red watercolor. Another way is to make a print on either printing-out or developing-paper without fixing, cut apart very carefully along the sky-line and allow to blacken in the light, thus making an opaque mask. The upper half is then attached to the negative with a few dabs of paste, either upon the film side, or back, as preferred.

When a visible printing-process is selected, the subject is printed in the usual way; then the cloud-negative is substituted (using a size larger printing-frame, fitted with plain glass to permit of moving the negative about) and the print adjusted, the latter being done by holding the whole to the light and looking through the paper before clamping in place. If the sky-line is simple all that need be done while the sky is printing will be to shade the printed landscape with a piece of cardboard, the desired control being obtained by moving this during the process. Should a white or very light object cut into the sky greater protection is necessary to prevent this part darkening while the clouds are printed around it; so in such a case a mask is made by cutting apart a proof, as previously described, using only the lower portion while the sky is being printed. Such a mask is illustrated in Fig. 7. This is best held in position by slightly touching the bottom or extreme edges with paste, and placing in correct position upon the print before adjusting the latter on the cloud-negative, although if greater softness along the edges is desired it can be produced by attaching the mask to the back of the cloud-negative or a piece of glass; only it is more trouble then to secure correct registration.

Where prints are made on bromide or gaslight papers the methods just described are not so satisfactory, because no visible image appears during exposure, thus making it difficult to join sky and foreground without showing either a light or dark line where the parts come together; but this is overcome by a method I worked out several years ago and found satisfactory. It is as follows:

Make the landscape print as usual, develop and wash rapidly in three or four changes of water to stop the action of the developer, but *do not fix.* Now place face down on a piece of thin, well-cleaned glass, and apply a squeegee to remove the surplus water and *all air-bells.* Using this glass as a separator, the moist print is located in the desired position over the cloud-negative, and the second exposure made. This will be about twice the normal for dry paper, as a wet emulsion is not so sensitive. Except in special cases, mentioned later, it is not essential to protect the foreground while printing the sky. After stripping from the glass the clouds are developed *locally* by applying the solution with a tuft of absorbent cotton. This was the general method followed in making prints shown in Figs. 3 and 5, which are on bromide paper. Should a mask be necessary to protect a light building, as in Fig. 6, owing to the difficulty of developing the clouds around the tower locally without encroaching upon the light portion with bad results, the first exposure is developed only until the image is

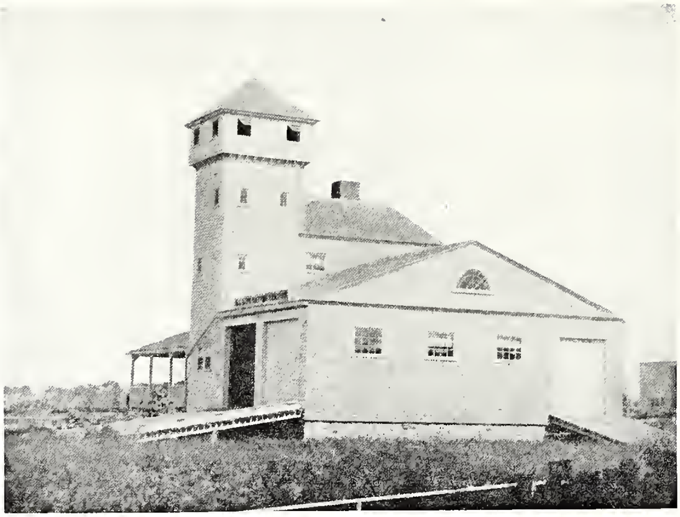


FIG. 6. STILL ANOTHER SKY NEEDED

just visible, washed, and after placing face down on the glass as before described, the mask (Fig. 7) is stuck in the correct position on the opposite side of the glass, and the clouds printed in; then, instead of developing the sky locally, the entire print is immersed, thus allowing the foreground to finish developing together with the sky. Should the latter develop slowly on account of the foreground having got a start, the print may be washed and the clouds finished by local development with satisfactory effect. Fig. 8 shows a print made in this way on Cyko paper.

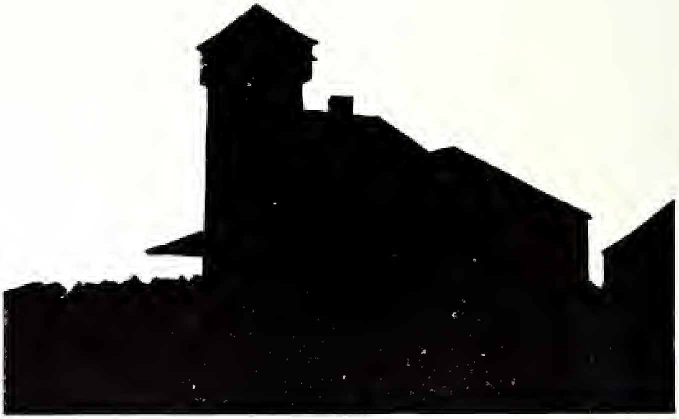


FIG. 7. THE MASK FOR CLOUD-PRINTING

To ensure a uniform tone or color upon developing-papers of any kind, some care is necessary to time the exposure of the clouds so that they will develop to the desired depth in approximately the same time as the landscape. A little practice soon enables one to judge this factor quite accurately; but if greater exactness is considered necessary a small strip of wet paper can be exposed first as a test.

The same methods of exposing and developing each part separately apply equally well to the making of enlargements, only no separating-glass is needed to protect the cloud-negative.

So far we have considered only the addition of clouds on each finished print, but when a number of duplicates is to be made it is much better to prepare a new negative of the combination, and thus eliminate all further labor attendant upon double printing. One way to accomplish this is to make a print exactly as wanted upon smooth-surface paper, either by contact or enlargement, and then copy with the camera. If done with care this generally answers the purpose, especially when the new negative is used only for contact-printing or small enlargements; but if subjected to considerable magnification there is likely to be some loss of quality, owing to the grain of the original print becoming visible. This, of course, is not so likely to occur if the negative was copied from a fair-sized enlargement; still it is desirable, when the very finest technical quality is needed, to make a combination transparency and obtain a new negative from this.

The preparation of such a transparency is not so difficult, indeed hardly as much trouble in some ways as making a print, because the sky and foreground are each made on separate plates, thus allowing exact register to be secured at leisure. For this work it is best to use regular lantern-slide or transparency plates, although almost any very slow ordinary plate will do if developed in a restrained developer and the exposure is carefully timed. If a worker is interested in slide-making the subject-matter can be kept within standard size, so the transparency becomes available for use in the lantern after the new negative is obtained. These plates, both in exposure and development, are handled practically the same as bromide papers, and the positives made either by contact, in a copying-camera, or with a focusing-enlarger, which allows the image to be made larger or smaller than the original. An improvised kit for holding the plates is easily evolved, therefore I will not take up further space with these details, but continue with the subject in hand.

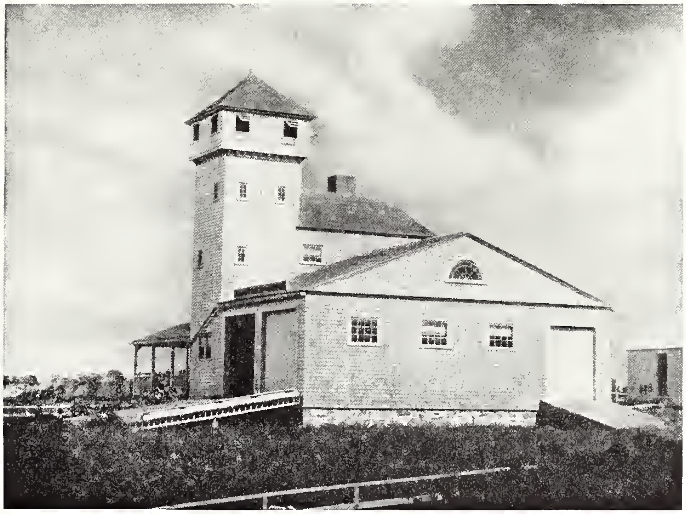


FIG. 8. THE LIFE-SAVING STATION

Print the landscape first, and after developing and fixing remove any grayness in the sky by local application of a hypo and ferricyanide reducer, applied with a swab of cotton or camel-hair quill-pencil. After washing and drying place in contact with a fresh plate — film to film, held together with a bit of gummed binding. The clouds are now located, keeping the landscape-positive between the negative and unexposed plate. After exposure the latter is separated from the first positive, developed and fixed, when upon examination a negative image of the landscape will be found superimposed on the clouds. All that now remains is to surface dry the plate with cotton or blotting-paper and apply the reducer to every part within the outlines until all traces of an image below the sky-line are removed — then wash and dry. Upon bringing the positives together again the parts are registered and bound together permanently. Substituting this positive in place of a negative in an enlarger, and a slow- or medium-speed ordinary plate of the desired size where the bromide paper is usually fastened, a new negative is obtained.

In conclusion I can say only that while some may consider the printing-in of clouds too much trouble, the serious worker will not stop on account of a little extra time and labor if the result justifies the expenditure, and as a matter of fact the technical work involved is not really so complicated; but I thought it best to describe every detail clearly in order to avoid possible confusion or uncertainty by inexperienced workers regarding any stage of the process.

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Good technique is of the greatest importance; but undue attention to technique will result in a loss of imaginative quality, and this is far more important than technical excellence.— Paul Lewis Anderson, in *Pictorial Landscape-Photography.*

The Use of Bromide

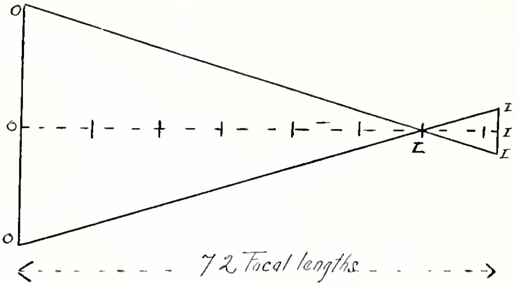
There is a growing tendency to discourage the use of potassium bromide in the developer, states *The British Journal of Photography*, and so far as this prevents new workers falling into the idea that more pyro and bromide will remedy matters when bad overexposure shows itself, well and good. But there is little doubt that bromide does increase the contrast of the negative; and further, that with plates or developers which tend to give foggy results, it prevents fog-veil. Brighter prints on bromide paper may be obtained with potassium bromide in the developer, although as commonly developed to the limit its effect is less to be expected than in negative-work. With prolonged development its effect is negligible, but development is usually stopped long before completion, the usual three or four minutes being only a part of the time during which the image would go on gaining density. It is probable that many workers who get clean negatives "without bromide" are really employing it, the manufacturer having quite unknown to him added a small proportion to the emulsion.

The Effect of Bellows-Extension on Exposure

PHILIP CONKLIN

TO the landscapist this article will be of slight interest; the portraitist will find one paragraph applicable to his work, but the man interested in enlarging and in making large copies, if he apply the table, will, I think, find it very useful. By large copies, I mean their relation to the original. A 14 x 17 copy from a 14 x 17 original requires the same exposure as a cabinet from a cabinet, because the bellows-extension is the same in each case.

It will be necessary to determine the focal length of the lens to be used — a matter of very few minutes' work. Draw up a one-inch image of a five-inch strip of paper; measure from the strip to the ground-glass and divide by 7.2. The quotient will be the focal length of the lens, and the nodal point will be six times this ascertained distance from the strip. It should be noted on the barrel, and will probably coincide with the diaphragm-plane. From this point all measurements are to be made. Inasmuch as there are various other more complicated ways to determine focal length, I will interpolate the explanation of the method suggested. An understanding of it may help with the use of the table. It has to do with the conjugate foci. One is the distance from original to lens, and will be referred to as OL; the other is the distance from the lens to the image, LI. These distances bear the same relation to each other that the original bears to its image. In the case of enlargements LI is the greater, and vice versa with reductions. To determine the greater distance, it is necessary to know only how much greater the image is than the original (in length — not area), and to add "one" and think of the sum as so many focal lengths. In the method under consideration we have arbitrarily chosen this relation as 5:1. Adding five and one gives us six (focal lengths) as the greater of the two foci. As the lesser distance must be one-fifth of that, it becomes $\frac{1}{5}$ of 6, or 1.2. Adding these we get for the sum of the conjugate foci 7.2 focal lengths. Knowing the distance in feet and inches, it remains only to divide by 7.2, see diagram.



Note that while OOO is five times as long as III, and that the former is five times as far from the nodal point, the greater distance is not five focal lengths, but six. In all cases there is one focal length to be added to the greater distance.

It is pretty generally understood that if a lens be focused on infinity the bellows-extension divided by the (optical) diameter of the diaphragm will give the F-value. (The distance from ground-glass to nodal point will be the focal length.) But if the same diaphragm be used to make a picture the same size as the original (a ratio of 1: 1), the bellows will be extended just twice as far, and the true value of the opening must be read as the second smaller F-number. This means an exposure four times as great. In photographing distant objects the variations in extension are so slight as to be negligible; but as we approach a ratio of about 1: 6 (which is somewhere near a cabinet head proportion) it is a decided factor, so that using a one-inch cabinet head as a unit the exposures would vary as follows:

Head in inches	*Relative exposure*
1.	1.
1.5	1.1
2.	1.2
2.5	1.3
3.	1.4
3.5	1.5
4.	1.65

If we go on to the extreme condition of an enlargement of five diameters, the efficiency of the same diaphragm is reduced to $\frac{1}{24}$ of that which it had when focused on infinity.

The accompanying table is based on the ratio of 1 : 1 as a unit, and gives exposure-factors for other ratios by quarter sizes. Column 1 designates the size of the image as compared with the original. Column 2 is filled out in terms of focal lengths, and must be completed by multiplying its various numbers by the focal length in inches of the lens to be used, and substituting these products in their respective places. It will then indicate the extension of the bellows LI in inches. After these substitutions are made, each can be divided by its neighbor in Column 1, and the quotients put in their proper places in Column 3. These will be the distances from lens to original. The sum of Columns 2 and 3 will be of great help in deciding whether or not an enlarging-apparatus can be installed in a restricted space. If more than one lens is to be used, Columns 2A, 2B, 3A, 3B, etc., can be made for each lens, and their focus placed at the top.

As the unit is a ratio of one to one, to keep tabs, one standard negative should be kept for purposes of comparison. Find how long an exposure is necessary to make a print from this standard through the lens same size as the negative, and mark this time on the negative. Compare any other negative to be enlarged, with the standard, and mark it as to its density compared with the standard.

When the enlargement is focused, the distance LI is taken. The number most nearly agreeing with it in Column 2 (a variation of an inch or two, depending on the lens, need not be considered) is found, and opposite, in Column 4, is the factor for correct exposure.

To facilitate the measuring, a tape can be fastened with its zero mark on the easel and allowed to run over a smooth roller or nail fixed to the camera in the plane of the nodal point, a weight on the pendant part keeping it taut. The readings are taken where the tape crosses the roller.

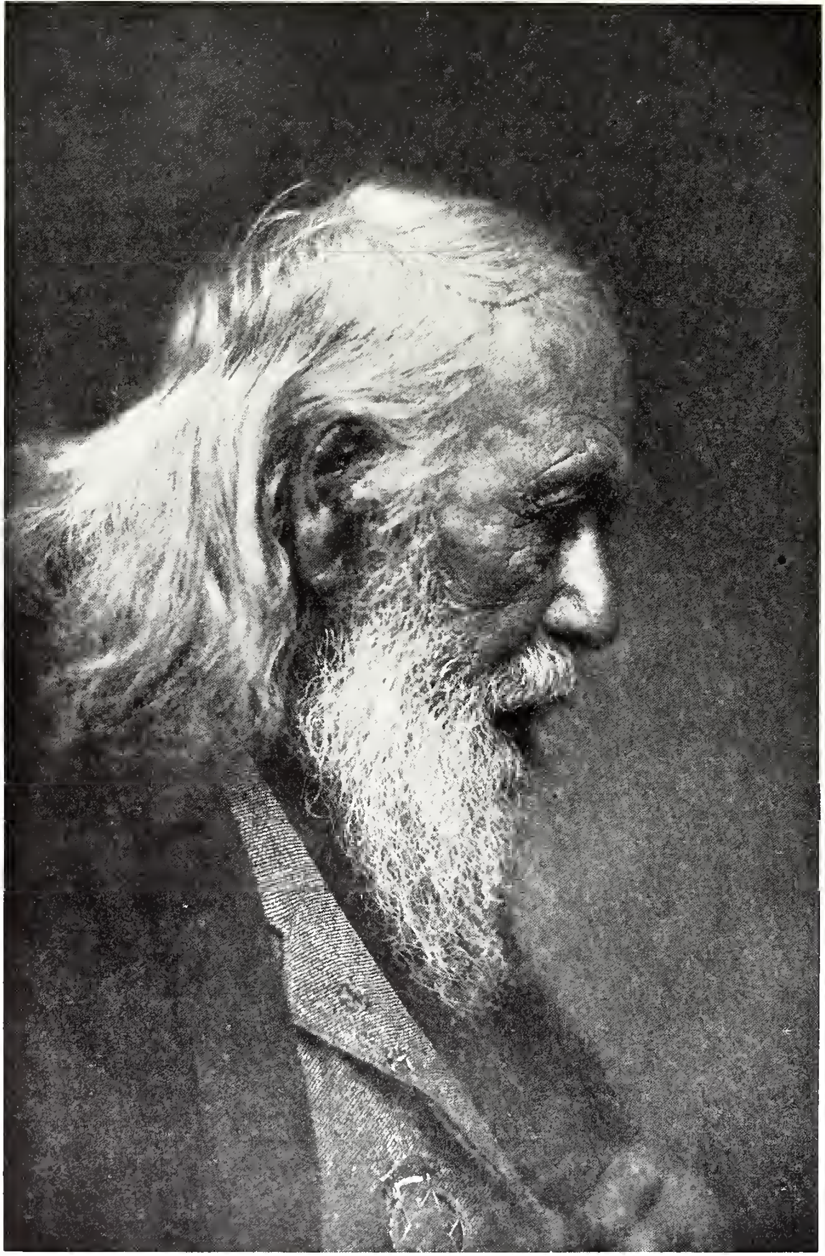
If an artificial light without condensors is the illuminant (or if several thicknesses of diffusing-material are used before and behind the condensors), this method absolutely cuts out all uncertain factors except the negative.

The table is also very useful under the skylight for making enlarged or slightly reduced copies. I use it almost daily.

It is understood that by bellows-extension is meant distance from lens to image. Of course in the case where a darkroom is used for enlargements, the bellows is on the other side of the lens.

Degree of Enlargement or Reduction 1	Distance L to I (in focal lengths) 2	Distance L to O (in inches) 3	Relative Exposures 4
.2	1.2		.4
.4	1.4		.5
.6	1.6		.6
.8	1.8		.8
1.00	2.00		1.0
1.25	2.25		1.2
1.50	2.50		1.5
1.75	2.75		2.0
2.00	3.00		2.3
2.25	3.25		2.5
2.50	3.50		3.0
2.75	3.75		3.5
3.00	4.00		4.0
3.25	4.25		4.5
3.50	4.50		5.0
3.75	4.75		5.5
4.00	5.00		6.0

THROUGH THE ARCHWAY — EARLY MORNING C. HOWARD SCHOTOFER



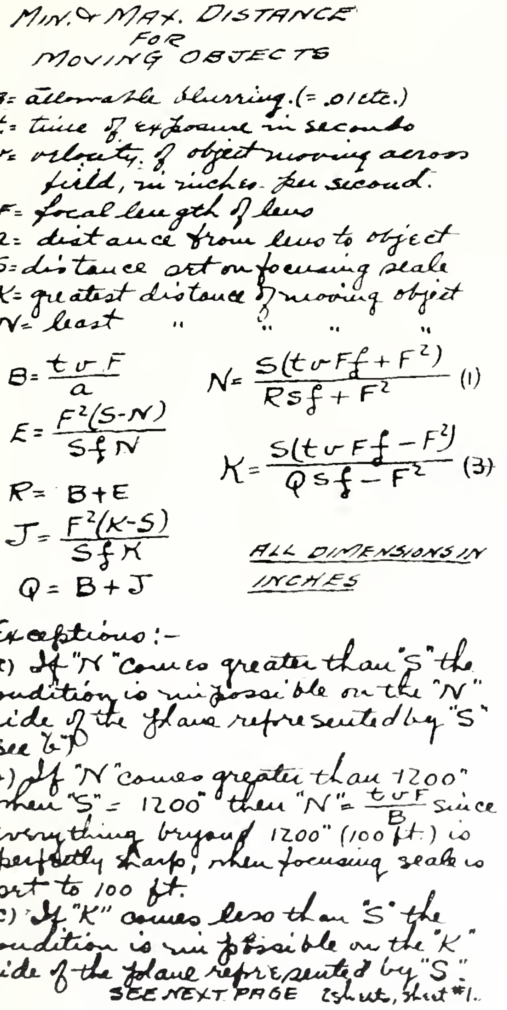
A VETERAN
D. D. SPELLMAN

Speed- and Exposure-Tables for a 3A Kodak

FRANKLIN H. SMITH

IN photographing an object in motion its image on the negative may be to a certain degree out of focus and at the same time yield a satisfactory picture. Just how much it may be out of focus is sometimes a matter of considerable importance in high-speed work because the correct timing of the plate or film to avoid extreme underexposure is quite as essential as absence of blur. A ready means to determine the limits and possibilities of this sort of work will be found in the accompanying tables, which have been worked out for a 3A Kodak fitted with a 6-inch anastigmat lens working at F/6.3, according to the principles stated in Plates I and II.

For example, referring to Plate III, if the focusing-scale is set for 25 feet any object traveling 3 miles per hour across the field of the lens will not show movement on the plate of more than $\frac{1}{100}$ inch if it is within 22 to 37 feet. This movement on the plate is due partly to being out of focus and partly to its actual movement, the total being $\frac{1}{100}$ inch on the plate. To get this



MIN. & MAX. DISTANCE
FOR
MOVING OBJECTS

B = allowable blurring. (= .01 etc.)
t = time of exposure in seconds
v = velocity of object moving across field, in inches per second.
F = focal length of lens
a = distance from lens to object
S = distance set on focusing scale
K = greatest distance of moving object
N = least " " " "

$$B = \frac{tvF}{a}$$

$$E = \frac{F^2(S-N)}{SfN}$$

$$R = B + E$$

$$J = \frac{F^2(K-S)}{SfK}$$

$$Q = B + J$$

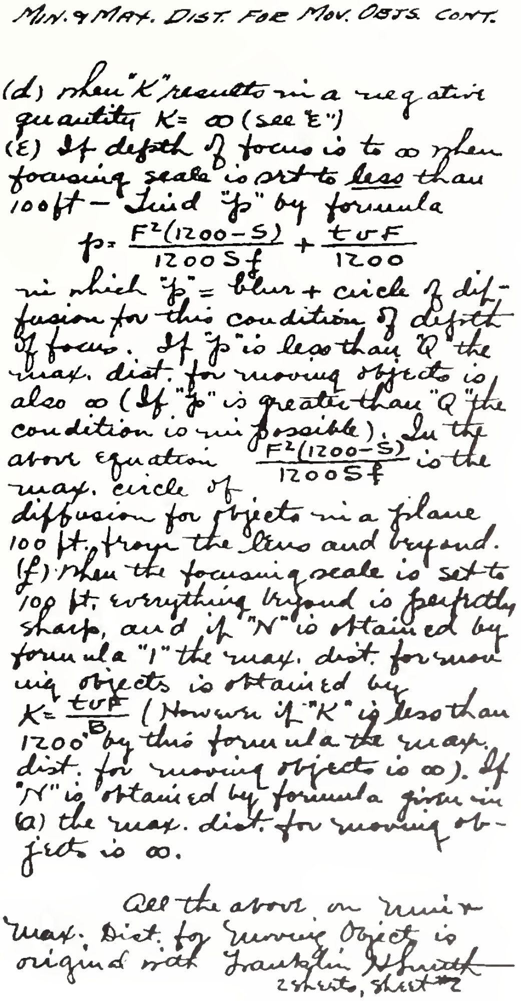
$$N = \frac{S(tvFf + F^2)}{RSf + F^2} \quad (1)$$

$$K = \frac{S(tvFf - F^2)}{QSf - F^2} \quad (3)$$

ALL DIMENSIONS IN INCHES

Exceptions:—
(a) If "N" comes greater than "S" the condition is impossible on the "N" side of the plane represented by "S" (see "b")
(b) If "N" comes greater than 1200" when "S" = 1200" then "N" = $\frac{tvF}{B}$ since everything beyond 1200" (100 ft.) is perfectly sharp, when focusing scale is set to 100 ft.
(c) If "K" comes less than "S" the condition is impossible on the "K" side of the plane represented by "S".
SEE NEXT PAGE 2 sheets, sheet #1.

PLATE I



MIN. & MAX. DIST. FOR MOV. OBJS. CONT.

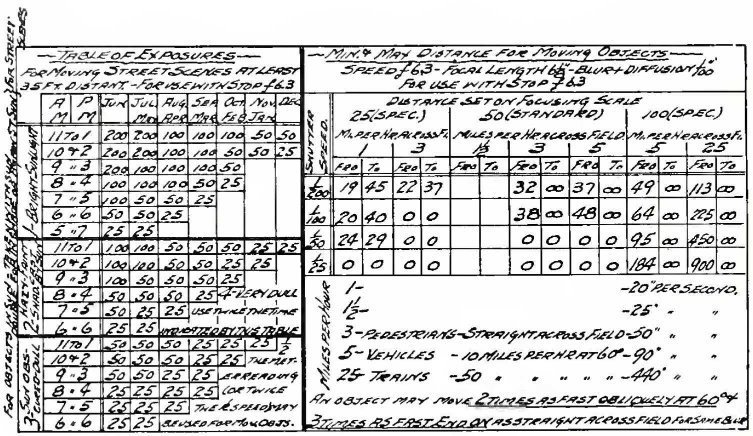
(d) when "K" results in a negative quantity K = ∞ (see "E")
(E) If depth of focus is to ∞ when focusing scale is set to less than 100 ft — find "p" by formula

$$p = \frac{F^2(1200-S)}{1200Sf} + \frac{tvF}{1200}$$

in which "p" = blur + circle of diffusion for this condition of depth of focus. If "p" is less than "Q" the max. dist. for moving objects is also ∞ (If "p" is greater than "Q" the condition is impossible). In the above equation $\frac{F^2(1200-S)}{1200Sf}$ is the max. circle of diffusion for objects in a plane 100 ft. from the lens and beyond.
(f) When the focusing scale is set to 100 ft. everything beyond is perfectly sharp, and if "N" is obtained by formula "1" the max. dist. for moving objects is obtained by $K = \frac{tvF}{B}$ (However if "K" is less than 1200" by this formula the max. dist. for moving objects is ∞). If "N" is obtained by formula given in (a) the max. dist. for moving objects is ∞.

All the above on min. & max. Dist. for moving Object is original with Franklin H. Smith
2 sheets, sheet #2

PLATE II



FOR OBJECTS IN SUN: TAKE HALF WITH SUN} FOR STREET SCENES
DOUBLE FOR IN SHADE OR BY [illegible] ST SUN

—TABLE OF EXPOSURES—
FOR MOVING STREET SCENES AT LEAST 35 FT. DISTANT.—FOR USE WITH STOP f 6.3

	A M P M	JUN	JUL MAY	AUG APR	SEP MAR	OCT FEB	NOV JAN	DEC
1-BRIGHT SUNLIGHT	11 TO 1	200	200	100	100	100	50	50
	10 & 2	200	200	100	100	50	50	25
	9 " 3	200	100	100	100	50		
	8 " 4	100	100	100	50	25		
	7 " 5	100	50	50	25			
	6 " 6	50	50	25				
	5 " 7	25	25					
2-HAZY-FAINT SHAD. CAST BY SUN	11 TO 1	100	100	50	50	50	25	25
	10 & 2	100	100	50	50	25	25	
	9 " 3	100	50	50	50	25		
	8 " 4	50	50	50	25	4-VERY DULL		
	7 " 5	50	25	25	USE TWICE THE TIME			
	6 " 6	25	25	INDICATED BY THIS TABLE				
3-SUN OBS.-CLOUDY-DULL	11 TO 1	50	50	50	25	25	25	½
	10 & 2	50	50	50	25	25	THE MET-	
	9 " 3	50	50	25	25	ER READING		
	8 " 4	25	25	25	25	(OR TWICE		
	7 " 5	25	25	25	THE ½ SPEED MAY			
	6 " 6	25	25	BE USED FOR MOV. OBJS.				

—MIN. & MAX DISTANCE FOR MOVING OBJECTS—
SPEED f 6.3—FOCAL LENGTH 6⅛"—BLUR + DIFFUSION 1/100"
FOR USE WITH STOP f 6.3

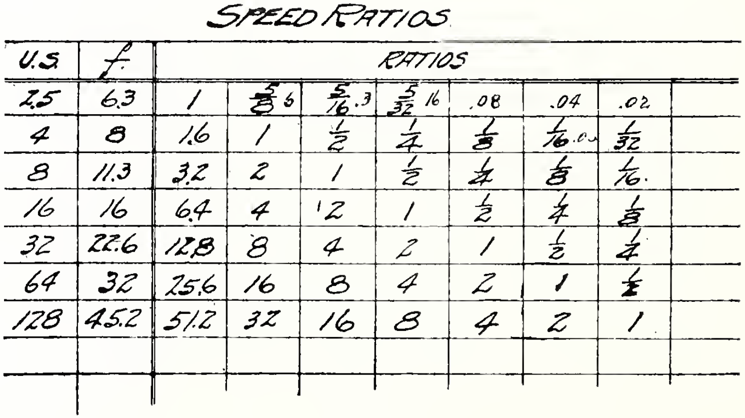
DISTANCE SET ON FOCUSING SCALE

SHUTTER SPEED.	25 (SPEC.) MI. PER HR. ACROSS FI. 1		3		50 (STANDARD) MILES PER HR. ACROSS FIELD 1½		3		5		100 (SPEC.) MI. PER HR. ACROSS FI. 5		25	
	FRO	TO	FRO	TO	FRO	TO	FRO	TO	FRO	TO	FRO	TO	FRO	TO
1/200	19	45	22	37			32	∞	37	∞	49	∞	113	∞
1/100	20	40	0	0			38	∞	48	∞	64	∞	225	∞
1/50	24	29	0	0			0	0	0	0	95	∞	450	∞
1/25	0	0	0	0			0	0	0	0	184	∞	900	∞

MILES PER HOUR
1— —20" PER SECOND.
1½— —25" " "
3—PEDESTRIANS—STRAIGHT ACROSS FIELD—50" " "
5—VEHICLES —10 MILES PER HR. AT 60°—90" " "
25—TRAINS —50 " " " " " —440" " "

AN OBJECT MAY MOVE 2 TIMES AS FAST OBLIQUELY AT 60° & 3 TIMES AS FAST END ON AS STRAIGHT ACROSS FIELD FOR SAME BLUR

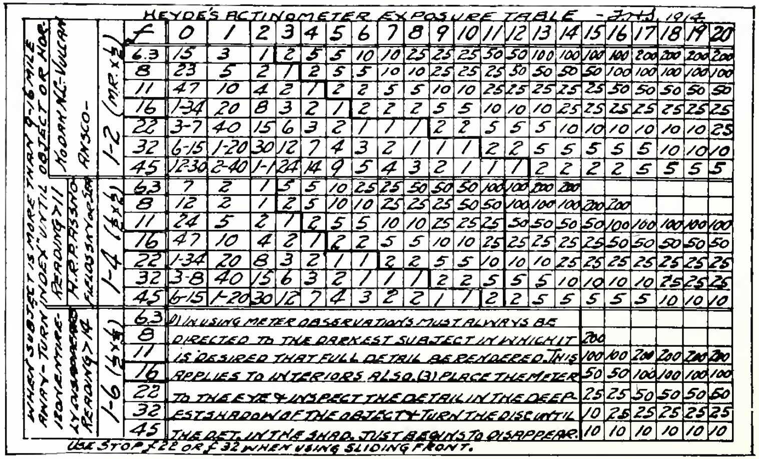
PLATE III



SPEED RATIOS

U.S	f.	RATIOS						
2.5	6.3	1	5/8 .6	5/16 .3	5/32 .16	.08	.04	.02
4	8	1.6	1	1/2	1/4	1/8	1/16 .0	1/32
8	11.3	3.2	2	1	1/2	1/4	1/8	1/16
16	16	6.4	4	2	1	1/2	1/4	1/8
32	22.6	12.8	8	4	2	1	1/2	1/4
64	32	25.6	16	8	4	2	1	1/2
128	45.2	51.2	32	16	8	4	2	1

PLATE IV



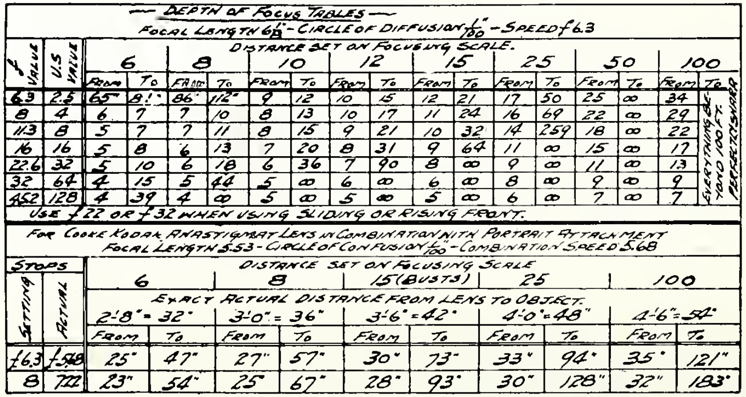
HEYDE'S ACTINOMETER EXPOSURE TABLE — J.H.J. 1914

WHEN SUBJECT IS MORE THAN 9-16 MILE AWAY—TURN "INDEX" UNTIL OBJECT OR HORIZON ENTIRELY DISAPPEARS

		f	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
KODAK NC-VULCAN ANSCO-	1-2 (M.R. x ¼)	6.3	15	3	1	2	5	5	10	10	25	25	25	50	50	100	100	100	100	200	200	200	200
		8	23	5	2	1	2	5	5	10	10	25	25	25	50	50	50	50	100	100	100	100	100
		11	47	10	4	2	1	2	2	5	5	10	10	25	25	25	25	25	50	50	50	50	50
		16	1-34	20	8	3	2	1	2	2	2	5	5	10	10	10	25	25	25	25	25	25	25
		22	3-7	40	15	6	3	2	1	1	1	2	2	5	5	5	10	10	10	10	10	10	25
		32	6-15	1-20	30	12	7	4	3	2	1	1	1	2	2	5	5	5	5	5	10	10	10
		45	12-30	2-40	1-1	24	14	9	5	4	3	2	1	1	1	2	2	2	2	5	5	5	5
READING > 11 H.R.P. ASSNO FIELD SKY OR SEA	1-4 (⅓ x ⅕)	6.3	7	2	1	5	5	10	25	25	50	50	50	100	100	200	200						
		8	12	2	1	2	5	10	10	25	25	25	50	50	100	100	100	200	200				
		11	24	5	2	1	2	5	5	10	10	25	25	25	50	50	50	50	100	100	100	100	100
		16	47	10	4	2	1	2	2	5	5	10	10	25	25	25	25	25	50	50	50	50	50
		22	1-34	20	8	3	2	1	1	2	2	5	5	10	10	10	25	25	25	25	25	25	25
		32	3-8	40	15	6	3	2	1	1	1	2	2	5	5	5	10	10	10	10	25	25	25
		45	6-15	1-20	30	12	7	4	3	2	2	1	1	2	2	5	5	5	5	5	10	10	10
READING > 14	1-6 (¼ x ⅕)	6.3	(1) IN USING METER OBSERVATIONS MUST ALWAYS BE																				
		8	DIRECTED TO THE DARKEST SUBJECT IN WHICH IT															200					
		11	IS DESIRED THAT FULL DETAIL BE RENDERED. THIS															100	100	200	200	200	200
		16	APPLIES TO INTERIORS ALSO. (3) PLACE THE METER															50	50	100	100	100	100
		22	TO THE EYE & INSPECT THE DETAIL IN THE DEEP-															25	25	50	50	50	50
		32	EST SHADOW OF THE OBJECT & TURN THE DISC UNTIL															10	25	25	25	25	25
		45	THE DET. IN THE SHAD. JUST BEGINS TO DISAPPEAR.															10	10	10	10	10	10

USE STOP f 22 OR f 32 WHEN USING SLIDING FRONT.

PLATE V



—DEPTH OF FOCUS TABLES—
FOCAL LENGTH 6⅛"—CIRCLE OF DIFFUSION 1/100"—SPEED f 6.3

DISTANCE SET ON FOCUSING SCALE.

f VALUE	U.S VALUE	6 FROM	6 TO	8 FROM	8 TO	10 FROM	10 TO	12 FROM	12 TO	15 FROM	15 TO	25 FROM	25 TO	50 FROM	50 TO	100 FROM	100 TO
6.3	2.5	65"	8'1"	86"	112"	9	12	10	15	12	21	17	50	25	∞	34	EVERYTHING BEYOND 100 FT. PERFECTLY SHARP
8	4	6	7	7	10	8	13	10	17	11	24	16	69	22	∞	29	
11.3	8	5	7	7	11	8	15	9	21	10	32	14	259	18	∞	22	
16	16	5	8	6	13	7	20	8	31	9	64	11	∞	15	∞	17	
22.6	32	5	10	6	18	6	36	7	90	8	∞	9	∞	11	∞	13	
32	64	4	15	5	44	5	∞	6	∞	6	∞	8	∞	9	∞	9	
45.2	128	4	39	4	∞	5	∞	5	∞	5	∞	6	∞	7	∞	7	

USE f 22 OR f 32 WHEN USING SLIDING OR RISING FRONT.

FOR COOKE KODAK ANASTIGMAT LENS IN COMBINATION WITH PORTRAIT ATTACHMENT
FOCAL LENGTH 5.53—CIRCLE OF CONFUSION 1/100"—COMBINATION SPEED 5.68

DISTANCE SET ON FOCUSING SCALE / EXACT ACTUAL DISTANCE FROM LENS TO OBJECT.

STOPS SETTING	STOPS ACTUAL	6 (2'8" = 32") FROM	TO	8 (3'0" = 36") FROM	TO	15 (BUSTS) (3'6" = 42") FROM	TO	25 (4'0" = 48") FROM	TO	100 (4'6" = 54") FROM	TO
f 6.3	f 5.48	25"	47"	27"	57"	30"	73"	33"	94"	35"	121"
8	7.22	23"	54"	25"	67"	28"	93"	30"	128"	32"	183"

PLATE VI

range of 22 to 37 feet one must use a shutter-speed of $\frac{1}{200}$ second. As indicated by the ciphers, $\frac{1}{100}$ second gives no results, for the movement is too great, even if exactly 25 feet from the lens.

The next thing desirable to know is if a speed of $\frac{1}{200}$ second can be used? Assume that it is January, bright light at noon. The table at the left of Plate III shows that $\frac{1}{50}$ second is required for correct timing, therefore it is useless to attempt to get an object moving 3 miles per hour at 25 feet distance, for it would be underexposed and the plate or film wasted. It may be done in May, June and July, however, as shown by the table. All other necessary data for street-scenes will be found in the two tables of Plate III.

The table of speed-ratios, Plate IV, is very useful when reading photographic articles, as one can readily convert the data into stops one is familiar with through frequent use. For instance, if an exposure-time is given in terms of U. S. 32 it may be converted readily to terms of F/16 by merely glancing at the table.

The table on Plate V is made for quick and easy use of the Heyde Actinometer with the shutter on the 3A Kodak, or any other shutter having the same speeds, the speeds on the back of the actinometer not being in terms of the speeds of this shutter. In every case the nearest shutter-speed has been figured and tabulated so that upon reading off the number by meter one can refer to the table to find the nearest shutter-speed instead of attempting to use the values given on the back of the meter. This does away with all calculation whatever in connection with the exposure. It will be noticed that the three parts of the table cover virtually all conditions, as noted at the left, the numbers to the left of the heavy zigzag line being whole seconds and to the right fractions of a second.

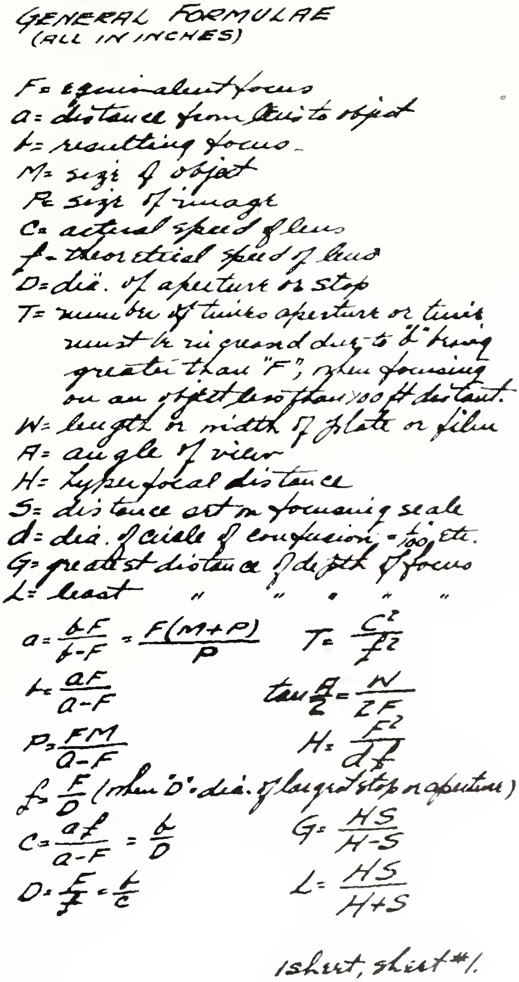
The tables on Plate VI were calculated by means of the formulæ on Plate VII. The bottom table is particularly useful for close work with a supplementary portrait-lens. Plate VII is of frequent service, for by its use one can often decide about how to set up the camera for any particular subject before starting the actual work. It will be noticed that various notes on easily forgotten points are appended to several of the plates where they will be seen as reminders.

While, as already stated, these tables have been worked out for a 3A Kodak fitted with a 6-inch anastigmat lens working at F/6.3, they have a much broader application.

(a) The table of speed-ratios may be used for any camera of any make or size.

(b) The depth of focus tables may be used for any camera, regardless of size or make, equipped with a lens the equivalent focus of which is 6 inches. Most cameras the size of the 3A have a lens with a focal length of 6 to 7 inches, therefore these tables are approximately correct for all $3\frac{1}{4}$ x $5\frac{1}{2}$ cameras.

(e) Heyde's Actinometer Exposure-Table may be used for any camera having shutter-speeds of any or all of the following: 1 second, $\frac{1}{2}$, $\frac{1}{5}$, $\frac{1}{10}$, $\frac{1}{25}$, $\frac{1}{50}$, $\frac{1}{100}$, $\frac{1}{200}$.



GENERAL FORMULAE
(ALL IN INCHES)

F= equivalent focus
a= distance from lens to object
b= resulting focus.
M= size of object
P= size of image
C= actual speed of lens
f= theoretical speed of lens
D= dia. of aperture or stop
T= number of times aperture or time must be increased due to "b" being greater than "F", when focusing on an object less than 100 ft distant.
W= length or width of plate or film
A= angle of view
H= hyperfocal distance
S= distance set on focusing scale
d= dia. of circle of confusion = $\frac{1}{100}$, etc.
G= greatest distance of depth of focus
L= least " " " " "

$a = \frac{bF}{b-F} = \frac{F(M+P)}{P}$ $\quad$ $T = \frac{C^2}{f^2}$

$b = \frac{aF}{a-F}$ $\quad$ $\tan\frac{A}{2} = \frac{W}{2F}$

$P = \frac{FM}{a-F}$ $\quad$ $H = \frac{F^2}{df}$

$f = \frac{F}{D}$ (when "D" = dia. of largest stop or aperture)

$C = \frac{af}{a-F} = \frac{b}{D}$ $\quad$ $G = \frac{HS}{H-S}$

$D = \frac{F}{f} = \frac{b}{C}$ $\quad$ $L = \frac{HS}{H+S}$

1 sheet, sheet #1.

PLATE VII

(d) The table of exposure for objects in motion in street-scenes may be modified by use of the table of speed-ratios to suit cameras of any size and make. Also the table of minimum and maximum distance for objects in motion may be used with stop F/6.3 of any camera of any size or make having a lens of 6-inch equivalent focus or thereabouts.

(e) By means of the formulæ given under the heading "General Formulæ" a depth of focus table may be made for any lens of any camera of any make. Besides that, the other formulæ given under the same heading are absolutely essential to photographers who attempt serious work of a precise character.

(f) By means of the formulæ given in connection with the table of minimum and maximum distance for objects in motion a table may be made for any lens of any camera of any make. The theory upon which these formulæ and the tables are based gives considerably more latitude in the taking of objects in motion than is indicated by most articles dealing with this subject. It is not to be inferred that more latitude is given than really exists, but by analyzing the proposition we see that an object in motion may be a certain amount out of focus and still give a "sharp" picture within set limits. These formulæ and the table tell what this is.

Summed up in a sentence, the publication of these tables together with the formulæ furnish every user of a camera the means to make similar ones for himself if they do not apply specifically to his outfit.

Artificial Illuminants for Photographic Use

C. E. KENNETH MEES

WHILE in the early days of photography almost the only source of light was the sun, the application of artificial illuminants to the art is constantly increasing. The illuminants which are available are of many kinds, and, indeed, include all the more powerful sources of light.

For portraiture a large diffused light-source is necessary in most work, and only occasionally can a concentrated source be used. Consequently, either a very extended source, such as that given by the mercury-vapor lamp, must be employed, or else a comparatively diffused system is arranged; thus, for an arc, it is convenient to place the reflector behind the arc, so that the light is directed away from the sitter onto a large secondary reflector, which may be a wall, though it is usually more convenient to have a movable arrangement. Whatever system is used for obtaining a large source of diffused light, curtains and screens are necessary so that the operator can adjust the area and direction of the light at will. An arrangement which has given satisfaction consists of a battery of twelve or sixteen nitrogen-tungsten lamps placed in a frame behind a diffusing-medium and covering an area of 30 or 40 square feet, the area to be utilized being modified by applying independent control to the separate lamps.

For color-photography — such, for example, as color-portraiture — the most important thing about a lighting-system is the constancy of the quality of the light; but high intensity is required, and the conditions as to size of source already explained under portraiture fully apply; we have adopted the battery of nitrogen-tungsten lamps already spoken of as being very suitable for color-portraiture.

In ordinary photographic printing the Aristotype and Solio papers, which used to be very popular, are often printed by means of a large enclosed arc instead of daylight, and this seems to be very suitable for the printing of such silver papers. For platinum printing, however, it is advisable to use a source of light which is not so hot, as the heat is very likely to give mealy prints. One large company do their trade-printing by means of mercury-vapor lamps, which are held constant by a resistance and ammeter, the current being watched and the printing being done entirely by time. Bromide and chloride papers are printed by artificial light exclusively, the usual printing-cabinet containing tungsten lamps, though for quick trade-work an arc-lamp or mercury-vapor lamp is frequently used, thus ensuring very short exposures.

For enlarging it has been customary to use an open arc, but if a condensor is used it would seem to be better to employ a condensed-filament tungsten lamp, because of its great constancy, the changes in the intensity of an arc making accurate exposure difficult unless the arc is one which permits of very good regulation. Much enlarging in trade-houses is done without a condensor, the negative being lighted by a suitable diffusing-screen, behind which the source is placed, such a diffusing-screen being a sheet of opal glass. For such work suitable illuminants are the enclosed flame or open white-flame arcs, but if mercury-vapor lamps are used a powerful diffuser is not needed, a sheet of ground-glass being sufficient if the tubes of the lamp are arranged so that there are a number parallel to each other a short distance apart.—*Abstracts from the Eastman Research Laboratory notes presented as a paper before the recent annual convention of the Illuminating Engineering Society, Washington, D. C.*

EDITORIAL

A Remunerative Hobby

THE almost incessant cry set up by amateur-photographers in Europe and America —"How can I make my camera pay?"— because they find the cost to maintain their chosen hobby somewhat expensive, has reached a point where the photographic editor is at his wit's end for a satisfactory answer. Of course, there are the usual methods to dispose of prints that have a commercial value; but does it not seem a pity for professed amateurs to commercialize their beautiful pastime? With equal justice the golfer could exclaim: "How can I make my golf-clubs pay?" He, too, finds it expensive to pursue his hobby; and when the cost of maintenance becomes a drain on his purse, he simply gives it up. He would not make it known that, in order to continue his favorite pursuit, he must find means to make it yield him pecuniary returns. Nor would the book-lover, perhaps, utter the pathetic cry: "How can I make my pastime pay?" because, forsooth, he occasionally pays out a dollar or two for a book of the day.

There seems to be no valid reason why an amateur should not seek a market for the product of his artistic or technical ability, provided it be done in a perfectly legitimate manner; but in thus commercializing his hobby, he automatically enters the semi-professional ranks, and forfeits the right to the exclusive appellation — amateur. Camerists who make their favorite pastime a source of revenue should adopt more dignified methods than those usually practised.

The Editor has not been insensible to the plaint, "How can I make my camera pay?" that appears so frequently in the photographic press; but has given it earnest and careful consideration. By ascertaining the photographic needs of such prominent book-publishers as Ginn & Company, The Macmillan Company, Harper & Brothers, Doubleday, Page & Company, Charles Scribner's Sons, The Century Company or Houghton-Mifflin Company, the really capable worker will find opportunities to furnish prints of special subjects. These include among other departments history, architecture, biology, botany, and zoölogy. It may be that the authors themselves provide the publishers with the necessary photographs; but very often there is room for additional subjects, or prints of superior technical merit. A few prints that illustrate the amateur's uncommon technical ability along special lines will generally excite the publisher's interest, and the applicant will not wait long for a reply. The wide-awake, resourceful photographer will not need to be told what course to pursue. In any event, he will ascertain what class of photographic subjects the publisher is likely to need.

Another way to make the camera pay, without sacrificing the amateur's dignity or self-respect, is to tell the story of his city or town by photographs. A lecture on this topic, illustrated by artistically colored lantern-slides, will surely prove a profitable undertaking. There is also a demand for illustrated lectures on popular scientific subjects, such as birds, trees, flowers and mushrooms. The Editor remembers how a certain amateur-photographer spent his summer-vacation in the National Parks and Rocky Mountains, photographing their salient features in a thoroughly expert manner. Having command of the best English, and being a good speaker, he converted his material into a series of illustrated lectures, which he delivered in public. Having thus found a pleasant and lucrative means to maintain his favorite pastime he gave up his regular employment and became a professional lecturer.

Still another refined way to compensate the outlay for photographic material is to hold exhibitions of one's work at home, or, if that is not feasible, in some art-store or other convenient place. The prints should be presented in an attractive manner, and prices should conform to established rates for superior professional work. This is a feature at arts and crafts exhibitions, where, however, many of the best-known pictorialists seldom exhibit. Often a group of meritorious workers will hold a joint exhibition, as was done in the Print-Gallery in New York recently, and which is reported to have been a pecuniarily successful affair. Of course, the prime object of the semi-professional photographer is publicity, and this can be attained in many ways. One is through the medium of the photographic press, an excellent reproduction of a striking subject being sure to attract the notice of firms in quest of desirable material. Needless to say, the monthly prize-competitions in PHOTO-ERA offer admirable opportunities for emolument and distinction to the capable worker.

PHOTO-ERA MONTHLY COMPETITION

For Advanced Photographers

Closing the last day of every month. Address all prints to PHOTO-ERA, Monthly Competition, 383 Boylston Street, Boston, U. S. A.

Prizes

First Prize: Value $10.00.
Second Prize: Value $5.00.
Third Prize: Value $2.50.

Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

Prizes may be chosen by the winner, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in Photo-Era, or in books. If preferred, the winner of a first prize may have a solid silver cup, of artistic design, suitably engraved.

Rules

1. This competition is free and open to any camerist desiring to enter.

2. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

3. *Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data.*

4. *Each print entered must bear the maker's name, address, the title of the picture and the name and month of the competition, and should be accompanied by a letter,* SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what competition it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of Photo-Era, unless otherwise requested by the contestant. If suitable, they will be published in Photo-Era, full credit in each case being given to the maker.

6. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15, unless they are packed with *double thicknesses of* ***stiff*** *corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express very cheaply and with indemnity against loss.

7. The prints winning prizes or Honorable Mention in the twelve successive competitions of every year constitute a circulating collection which will be sent for public exhibition to camera-clubs, art-clubs and educational institutions throughout the country. The only charge is prepayment of expressage to the next destination on the route-list. This collection is every year of rare beauty and exceptional educational value. Persons interested to have one of these Photo-Era prize-collections shown in their home-city will please communicate with the Editor of Photo-Era.

Awards — Vacation-Scenes

Closed November 30, 1915

First Prize: Charles M. DeBevoise.
Second Prize: Rupert Bridge.
Third Prize: William S. Davis.

Honorable Mention: Beatrice B. Bell, F. I. Jordan, E. D. Leppert, Dr. Maclay Lyon, Harry G. Phister, Wright M. Pierce, Myra D. Scales, Dr. F. F. Sornberger, H. Templeton, William J. Wilson.

Special commendation is due the following workers for meritorious prints: Geo. W. Bibby, Eva L. Eden, Hermann Gabriel, Ray Giles, Alexander Green, A. B. Hargett, Pollux Hein, A. M. Holcomb, Mrs. C. M. Hord, James P. Martin, Alexander Murray, Elise Norman, Ralph B. Williamson.

Subjects for Competition

"Night-Pictures." Closes January 31.
"American Scenic Beauties." Closes February 29.
"Home-Portraits." Closes March 31.
"Subject for Photo-Era Cover." Closes April 30.
"Miscellaneous." Closes May 31.
"Speed-Pictures." Closes June 30.

Photo-Era Prize-Cup

In deference to the wishes of prize-winners, the Publisher will give them the choice of photographic supplies to the full amount of the First Prize ($10.00), or a solid silver cup of artistic and original design, suitably inscribed, as shown in the accompanying illustration.

Is There a Parallel in Photography?

Thinkers and observers will certainly rejoice in the possession of the vivid and sincere impressions of illustrious, or simply curious, figures of the present time. One may wish that artists of to-day who have renounced the cold madrigals of ancient landscapes might replace also in their real life the distinguished figures of the past.— *David de la Gamme.*

Home-Portraits — Photo-Era Competition
Closes March 31, 1916

THIS contest differs from previous ones in that all entries must be the direct, original result, without any of the technical aids used in professional studios, such as special headscreens for softening the light in general, or locally, as on the hands, no artificial backgrounds whatever, and the light to come only from vertical windows rather than top or oblique skylights.

No retouching whatever is to be allowed on the negative. This does not mean that accidental blemishes may not be removed; but it does mean that the pencil must not be used to alter modeling or change lines in the face.

Perhaps one of the secrets of the charm of old daguerreotypes is the fact that no retouching was done, and the natural expression and skin-texture are unaltered. After the use of the pencil was begun, things went from bad to worse until the ordinary commercial photograph was so smoothed out and rounded, so altered in expression and contour, that it might better pass for a picture of a wax-figure in a draper's window than of a live, flesh-and-blood person.

A few years ago the reaction set in and, although the cheaper class of commercial photographers still retouch to excess, the better grade of workers have learned not to turn over their carefully posed and lighted negatives to an indiscriminating retoucher, but either do the work themselves or employ a person of artistic training who will do only such work on the plate as they themselves shall indicate.

The old-time retoucher felt it his conscientious duty not to leave a spot as big as the point of a pin on the whole face untouched by his pencil-point. Every wrinkle and prominent vein disappeared, every vestige of character and individuality going with them. Sixty was made to look like sixteen; and while the sitter might feel pleased and flattered (especially if it were a woman), when a man receives a picture of his mother he wants it to look like her as he knows her, not as she might possibly have looked in her youth. Every line in that face has a meaning for him, and he does not wish to have them, and the character they indicate, erased from her photographs.

The "bread and butter" worker must of necessity modify lines and eradicate double chins to please his patrons; but the amateur who is doing work to please himself and the judges will be wise enough to leave in the face of his sitter all the changed contour, the lines and the wrinkles, that life, and his attitude toward it, have engraved there. This does not mean that it should be one's object to accentuate the wrinkles until the face looks like a map in "The Blue Book." That is the other extreme, and almost equally to be avoided. It does mean that the face should be so carefully focused, posed and lighted that all the character will be retained without exaggeration of defects necessitating work with the pencil.

A little experimenting with your sitter under the light will teach you more than much talking of the "other fellow." First seat your model very close to an ordinary unscreened window. You will find one side of the face very light while the other is almost black, the eye on the shadow-side being scarcely visible. The

FATHER AND SON KATHERINE B. STANLEY

BETWEEN DIPS CHARLES M. DE BEVOISE

FIRST PRIZE — VACATION-PICTURES

shadow of the nose falls straight across the cheek if the shadow-side of the face gets light enough to show a cast shadow, and all the little irregularities of skin-surface cast shadows, which greatly increase their prominence.

Now move your subject farther from the source of light, and screen the lower third of the window with some opaque cloth. The shadow-side is now less dark, and the nose-shadow falls obliquely toward the corner of the mouth. If the face is a much-wrinkled one, however, you will find them still too prominent. In extreme cases one might face the sitter almost directly toward the source of light. This, however, gives so flat a light that loss of modeling is pretty sure to result. A better way is to turn the face as much into the light as is possible without sacrificing roundness, and then bring a reflector near enough to illuminate the shadow-side of the deepest wrinkles.

Remember, however, that the object is not to obliterate the wrinkles, but only to so soften them that no work on the plate will be necessary. The deep crease often found running from the nostril to the corner of the mouth, if given a straight side-illumination, will cast so heavy a shadow as to leave an almost inky black line on the print entirely untrue to nature. If it be true that the camera cannot lie, it can at least be made to vilify or flatter at the will of the operator.

Another method of softening lines and blending lights and shadows is to interpose a diffusing-screen between the sitter and the source of light. To observe the effect of this treatment, hold your finger or a pencil in such a position that it casts a strong shadow on the table, then hold a piece of tissue-paper between it and the light and see the shadow disappear.

To obtain softness in taking faces both old and young, some workers like to blur the focus very slightly, thus softening all outlines. A good way to do this is to focus as usual and then lengthen the bellows-extension just the least bit, thus bringing the point of focus a little short of the figure. If the focus is shifted in the other direction the background is apt to be too sharp for the figure and the whole composition thrown into wrong relation.

Instead of taking the picture in this way, however, many prefer to make a sharp negative and obtain softness in the printing. This may be done by placing a piece of clear celluloid between negative and paper, or by printing from the back of the plate.

The next suggestion may be put down as rank heresy, but another way to avoid the necessity of retouching is to use a lighting giving very strong contrast. This would hardly be applicable to elderly models, but with a young and smooth face defaced by freckles it is an available means of salvation. The prettiest lighting of this sort is a simulated firelight. If you have available a window that comes to the floor, well and good; if not, the subject must be posed on a platform or table to bring him on a level with the light. Cut out all light except from a section of window about two feet square on a level with the floor. The upward tendency of the light may be enhanced by placing a mirror on the floor. If a fender is available, that may be placed in front of the light and a part of it included in the picture, adding to the realism. A subject posed on the floor or in a low chair will receive the light from below, and with the room darkened and a very cautious use of reflectors a very successful firelight-effect may be obtained. In this sort of lighting it is desirable to have a strong contrast of light and shade, and the light-side of the face will be so dense that freckles will not show, and the shadow-side so dark that they are invisible.

Many facial defects may be minimized by the position in which the head is posed. Not infrequently a face is unsymmetrical. One eye is larger than the other,

SECOND PRIZE
VACATION-PICTURES

VACATION-DAYS

RUPERT BRIDGE

perhaps, and by posing the subject with the small eye nearer the camera the difference is not noticed in the print. Possibly the nose is crooked and in a front view it is very noticeable, but with the head turned to one side the irregularity vanishes.

The first thing to do, then, is to study your subject. Decide what good points you wish to emphasize and what defects you wish to minimize. This done, bend your energies toward posing and lighting the model in such a way that the desired results may be obtained in the negative without recourse to the aid of the retoucher.

And don't forget that human flesh — face, neck and hands — *is not white*. It has color, and should be rendered many degrees less light than a man's collar.

The choice of a printing-medium will also affect the result materially, for the softest of plates may be made to yield a harsh and impossible print if the wrong paper be chosen. An ideal paper for our present purpose is a platinum, as it softens detail and makes retouching superfluous. Any matte-surface paper is preferable to one having a gloss, and even a harsh negative can be so corrected in printing when the right paper is found that the results are most surprising.

KATHERINE BINGHAM.

Judging Lantern-Slides

EVERY lantern-slide to be judged fairly must be judged by projection on the screen. It is impossible, at least in the case of warm-toned slides, to form any perfectly reliable opinion as to their vigor until this is done; but a makeshift can be arranged which will be helpful when slide-making by constructing a little box about 3¼ x 3 x 12 inches, with a groove an inch from one end into which a slide can be dropped. That end should be closed with a piece of opal glass, and the whole interior of the box painted a dead black. On looking into such a box the slide is seen by transmitted light only. This is important in the case of slides in which the deposit itself is of a light color, as it is in the case of some warm tones, for such slides when viewed loose in the hand look much weaker than they will look on the screen. The light-colored deposit reflects the scattered light to the eye, and so does not appear to be so dense as it is in reality; the blackened box cuts off most of this reflected light. A few cover-glasses with masks of different sizes mounted on them may be kept with the box, and different sizes and proportions of masks may thus be tried before the slide is finally bound up.—*Photography and Focus.*

Sunning Down

A LANDSCAPE-PRINT in which the sky is quite white is often very much improved by sunning down; that is to say, by exposing the sky-part to white light, so that its intense whiteness is toned down a little. Although this is called "sunning down," it must not be done in direct sunshine, but in a good diffused light. It is best to have a printing-frame a good deal larger than the print, and to put in this a piece of clean glass. If this is not available, the print may be laid on some flat surface and covered with a sheet of glass, so that the work can be done without any fear of fingering the surface of the print. If the print is being made with a margin the mask should be held on the print while the negative is slipped out, so that the mask is not disturbed. In this way it is possible to show the edge of the mask all around the print, and so avoid places where, in consequence of the density of the negative, the outline of the masked area is lost in a general whiteness. A card should be used to shade the print, and it should be kept moving all the time, gradually uncovering more

THIRD PRIZE
VACATION-PICTURES

A WAYSIDE FARMHOUSE WILLIAM S. DAVIS

and more of the sky from the top downwards to the horizon and then moving it up again. This will cause a gradual lightening of the general tone of the sky from above downwards, and will give a more realistic effect. It is quite easy to sun down bromide or gaslight prints, using for the purpose the same light as that by which the printing is done. If there is any likelihood of making a mistake, the sky-end of the print should be marked on the back with a cross in pencil before removing the paper from the negative.—*Photography and Focus.*

Platinotype and Its Modifications

Some years ago, lecturing before the Royal Photographic Society on modifications in platinotype, Mr. W. H. Smith spoke very strongly against the use of a mercury salt in the developer in order to obtain warm tones on paper made to give black prints. He said that if enough mercury were used to get the warm tone, a combination was obtained which was not permanent. The same gentleman came before the same society a few evenings ago (November, 1915) and again emphasized this point. He showed a print which was developed on the occasion of the previous demonstration, the developer being potassium oxalate and mercury chloride; and although the desired warm tone was obtained, the consequence had been that much of the image had disappeared in the course of five years, and, moreover, the print had not been exposed to the atmosphere. Mr. Smith found, however, that a black print in platinum, toned solely with uranium, gave a most beautiful effect, and, so far as he had been able to find out, showed no loss in its keeping-properties.

For sepia platinum (Mr. Smith continued) it was necessary in the ordinary way to use the developer hot, but a very nice warm tone could be obtained with a cold developer of a different solution. A much finer sepia could be obtained on a sepia paper with a cold developer than could be got by using black paper and trying the use of mercuric chloride in the developer to get the result. With a small quantity of mercury there was no danger, and he advocated the plan of taking a sepia paper and using the following:

Water	80 cc.
Potassium citrate	20 grams
Citric acid	2 grams
Glycerine	80 cc.
1-percent solution of mercuric chloride	4 cc.

If, however, such a developer were used for a black print, there was not enough mercury to warm the tone, and the use of too much mercury meant the impermanence of the print.

Speaking of granularity occurring in platinotype, Mr. Smith said that this was due to underdevelopment. When the platinotype image flashed up suddenly, some workers, afraid that it might go too far, took it out at once and put it in the acid bath, and were then disappointed at getting a granular deposit. If, however, the developer did not follow the pigment right into the pores of the paper, the mere surface only was developed, and not the under part, thus causing granularity.

The Amateur Photographer.

A Substitute Wanted for Silver Nitrate

The great scarcity of silver nitrate in Germany on account of the seizure of all nitric acid for war-munitions has set the photographic chemists busy in an effort to find a substitute, and they have been experimenting with silver chloride and sulphate, but so far, we learn, with only negative results.

THE CRUCIBLE

A MONTHLY DIGEST OF PRACTICAL FACTS FOR PHOTOGRAPHIC WORKERS

With Reviews of Foreign Magazines, Progress and Investigation

Edited by PHIL M. RILEY

Readers are encouraged to contribute their favorite methods for publication in this department
Address all such communications to The Crucible, PHOTO-ERA, 383 Boylston Street, Boston, U. S. A.

Eikonogen as a Substitute for Metol

At the time of writing, December 13, 1915, metol is not obtainable in Boston, and doubtless this condition exists elsewhere or soon will. The last quotation was $1 an ounce, and prices almost if not quite as fabulous will be asked for Rhodol, Tozol and all other equivalents while they last. This means that until there is relief from the chemical market across the seas American photographers must adopt some substitute in developers for bromide and gaslight papers. Many foresighted workers who laid in a generous supply of metol at the outbreak of the war have nearly exhausted it, and what to use in its place now presents a serious question.

Several substitutes have been suggested, even including a reversion to ferrous oxalate (see Photo-Era for October, 1914, page 200), but strangely the mention of eikonogen, if it has been made at all, has not come to my attention. Possibly there may be objections to it which metol is free of, but I have used it personally with much satisfaction, and certainly in such times as these one cannot afford to be too captious. Indeed, I believe that one or more of the developers now sold and widely used under fanciful trade-names are in reality eikonogen-hydroquinone combinations. It is true that developers containing eikonogen may not safely be used to quite the same degree of exhaustion as metol-hydroquinone, nor can it be greatly diluted for slow tank-development, but otherwise there should be no serious trouble, and the quality of work during the life of the solution is excellent.

We may well consider ourselves fortunate that we still have hydroquinone, for in most instances, aside from the present, it is employed in much larger quantity than the other agent in combination with it. The price is high, $7 a pound, but the end of the supply is not yet in sight. And while it cannot be said that the quantity available of any foreign-made developer is adequate, most dealers have in stock more eikonogen than other reducers of a similar nature. The present price is $5 a pound, so that in an eikonogen-hydroquinone formula one uses the larger quantity of the cheaper developer.

Since its introduction, in 1889, eikonogen has been the chief competitor of metol as a soft-working, detail-giving agent. Although, strangely enough, regarded by most workers as a developer primarily for negative-work only, when combined with hydroquinone it becomes a remarkably useful developer for general purposes, including the development of prints, and one capable of almost as much modification as pyro. With eikonogen alone it is difficult to obtain density and snap, but a combined developer with hydroquinone unites the softness and detail-giving power of eikonogen with the density-giving power of hydroquinone, adapting it to the development of plates, films, transparencies, lantern-slides, bromide and gaslight papers.

As negatives developed with this combined developer incline towards softness with abundant detail, even in the case of forced development of underexposures it is particularly valuable for portraiture, flashlights and very rapid exposures, such as focal-plane work, or anything tending towards underexposure; also for subjects involving great contrasts in lighting.

Eikonogen appears as a yellowish-white powder, or yellowish crystals when fresh, but rapidly changes to a brownish tinge upon exposure to the air. It is sparingly soluble in water, but readily so in the presence of alkalis, particularly when heated. It is non-poisonous and does not stain the fingers. In its reducing-action eikonogen is rather more energetic than pyro or hydroquinone, being similar to ferrous oxalate and giving a clear negative of blue-black color.

Solutions may be used several times, and although they gradually darken, their strength reduces very slowly. If used too old or too much diluted, they may cause uneven action and produce peculiar streaks and blotches like finger- and brush-marks or insensitive spots, appearing as though the plate had been scrubbed with a dirty or greasy brush, or had not been properly dusted off. For this reason eikonogen-hydroquinone is not suitable for slow tank-development. If the supply fails, and a very old developer must be used, soak the plate, film or paper in water for a few minutes before immersing in the developer. This often obviates the trouble.

A standard formula is as follows:

A

Water	48	ounces
Sodium sulphite, anhydrous	2	ounces
Eikonogen	240	grains
Hydroquinone	60	grains

B

Water	16	ounces
Sodium carbonate, anhydrous	2	ounces

For plates, films, transparencies, lantern-slides, take 3 ounces of A and 1 ounce of B. The factor is 12.

For bromide and gaslight paper add 1 drop of a saturated solution of potassium bromide to each 4 ounces of the above working-solution.

For double-coated plates, use 3 ounces of A, 1 ounce of B and 4 ounces of water.

In hot weather more water may well be used in all working-solutions, as it gives less contrast and density. Cold solutions give less density than those used at correct temperature, 65 degrees. At warmer temperatures the density is very much intensified, particularly with slow and contrast plates.

In making the stock-solutions, use boiling water, and in winter a little glycerine may be added to prevent precipitation. If a more concentrated developer is desired in order to obtain more contrast, the water in solution A may be reduced to 32 ounces. Potassium carbonate in

FIRST PRIZE
BEGINNERS' CONTEST

UNCOMMON ASPECT OF COMMONPLACE THINGS MILTON M. BITTER

place of sodium will also yield a more energetic developer. If the sulphite is of good quality, and the solutions kept in small, full bottles tightly corked, rather than in a large bottle only partly full, it will keep in good condition for an indefinite time.

When overexposure is known, old, used developer is preferred by most workers, strengthened, as development proceeds, with fresh solution and a drop or two of bromide solution. Bromide acts very powerfully with eikonogen, increasing contrast, particularly in the print. When there is a suspicion of underexposure, or when soft portrait-negatives are desired, bromide should be omitted. The quantity stated for papers will usually be enough to keep the whites clear. More will increase the olive tone of the print as well as its vigor.

Submarine-Photography

According to the *Frankfurter Umschau*, attempts are to be made, after the conclusion of peace, to raise some of the valuables sunk during the war in a large number of ships. The raising-operations are to be assisted by direct submarine-photographs, which will give the searchers the exact position of the sunken ship and material. It is stated that an American has been making experiments with the Cooper Hewitt quartz-lamp, for the use of which he has constructed a special apparatus. He has been working with a battery of nine lamps of 2,400 candle-power each, and increasing the power by reflectors, so that he has succeeded in obtaining excellent photographs, and even kino-films, of a submarine boat under water, at a distance of thirty meters.

Hydroquinone Toning

O. Kühne, in the *Wiener Mitteilungen*, says that if bromide prints or diapositives are placed in a bath of 200 parts water, 5 parts potassium bromide and 1 part hydroquinone the picture is changed to an agreeable, delicate reddish tone, the coating becoming at the same time considerably hardened. After washing, this tone can be further modified. Ten-percent ammonia gives a warm black, which, however, on being washed, returns to the red tone. Alkaline sulphur salts give various brown tones. If the diapositive is briefly washed after the hydroquinone bath, and then placed in an amidol developer, a sepia-brown results; with bromide prints the color is a dark, purplish brown. These baths are also good for strengthening diapositives and bromide prints, and present many interesting possibilities for modification and improvement of prints not having a pleasing tone.

THE ROUND ROBIN GUILD

An Association of Beginners in Photography

Conducted by KATHERINE BINGHAM

This association, conducted under the auspices of PHOTO-ERA, and of which PHOTO-ERA is the official organ, is intended primarily for the benefit of beginners in photography. The aim of the association is to assist photographers by giving them information, advice and criticism in the Guild pages of PHOTO-ERA and by personal correspondence. Membership is free to subscribers and regular purchasers of the magazine sending name and address to PHOTO-ERA, The Round Robin Guild, 383 Boylston Street, Boston, U. S. A.

Mat-Cutting

The cutting of a mat or mask for the printing of pictures seems a very simple thing, and one that hardly needs discussion, yet from the appearance of many amateurs' prints, present methods could well be improved upon. It is a pity for an otherwise attractive print to be marred by uneven lines of bordering white, with ragged edges and clogged corners.

A white border is not to be desired when a print is to be mounted, but where negatives of varying size are to be used for postcards, or when prints are to be left unmounted, it is often necessary or advisable.

"An infinite capacity for taking pains" is a very great essential in photography, and the way in which one's final product, the print, is put out is the thing by which his work is judged.

A negative of small size printed on a postcard within a mat indicates a very negligent and careless worker. The size of negative and card should be ascertained and the mask so cut that an even margin is shown. If the shape of the film forbids this, then leave an even space at the top and left side, allowing the other two margins to vary as need be.

The size of the opening having been determined, choose an opaque paper such as comes around plates or developing-paper, making sure it is an unwrinkled piece and without holes. The best cutting-surface is an old glass negative, cutting on the film side. Have a sharp knife and a ruler with a metal edge. Use a T-square to draw the outline for the opening, as corners that are not at right angles will cause you much trouble.

Having the opening laid out accurately, cut it out with the blade of the knife held rather flat, and cutting entirely through the paper the first time. Do not mind if the cut runs a trifle past the corner; better that than not going quite to the corner, and having an ugly tuft left to block the clear outline.

Having the four sides carefully cut, see if the corners have an inclination to leak light. If so, cut a small piece of paper and glue it on, just meeting the corner and covering any overlapping cuts. It simplifies adjustment to stick the mask onto a glass the size of the printing-frame. It also helps in adjusting the card if a heavy line is drawn where the top and left side of the card should come to have the margins correct. Then, if many prints are to be made from the same film, it can be attached lightly to the mask, and so kept in register.

When ovals or circles are to be cut, the best way is to get the brass "cut-outs" and a wheel-trimmer, for the expense is not great, and there is no other really satisfactory way to cut them. It takes an unusually steady hand and accurate eye to follow an oval outline either with a knife or scissors. For square openings the Eastman chart-paper simplifies the matter of square corners, and enables one to calculate and space his opening very quickly.

Bas-Relief-Effects

There are many interesting "stunts" that may serve as photographic amusements, some of them giving results that are amazing but not in any sense beautiful or useful. Here is one interesting variation from the ordinary print which, if well carried out, gives some very beautiful results. The beauty of the result depends not a little on the careful choice of subject for the experiment.

A portrait of a fine head seen in profile is one of the best subjects. A good-sized flower-study would also be appropriate. The subject should be something that is beautiful in line rather than dependent on detail for its charm. If a negative is to be made especially for this use, it should be left rather thin, as that will make after-processes less lengthy.

Having your negative ready, take it into your dark-room and load another plate face to face with it in a printing-frame. Expose for only a second or two to a weak light, and develop in a rather strong developer to about the same depth as the negative.

When this glass positive is washed and dried, place the negative and positive together and hold to the light. When the two are exactly in register you will see that the image almost disappears; then, by a very slight shift one way or the other, the resulting image has the effect of a marble bas-relief. The accent of light can be put wherever you wish by shifting the plates, and when the desired result is secured it is advisable to bind the plates together by one or two strips of paper over the edges to keep them from shifting.

Place the two plates together into your printing-frame, and also the sensitive paper. The double density will make the time of exposure rather long, and care must be taken to have the rays of light strike the frame squarely, as the thickness of the glass is between the film and paper. Printing at the bottom of a box is the safest way, perhaps. The same results may be obtained by using an oiled paper print as the positive, but this makes printing almost too slow to be practical.

Just as Good

Talkative Customer — "And what are your views on the Balkans?"

Shopman — "I'm very sorry, sir, but we ain't got none. We've got some lovely photographic views of the market-place, the parish-church and new town-'all at a penny each."—*Exchange.*

SECOND PRIZE
BEGINNERS' CONTEST

"HOW JOLLY" C. H. JUDSON

A New German Film

The *Photographische Wochenblatt* reports that a new roll-film has recently been placed on the market by F. Bayer, of Leverkusen, near Cologne, Germany, which is welcomed with much pleasure on account of the great scarcity of films. The new film is not coated with gelatine on the back, but is non-curling, which is a great advantage; it is also said to be less inflammable than the old kind, because it is not made of celluloid, but of cellite (acetylcellulose). It would be a good thing if this should prove a step towards the elimination of celluloid films, the use of which always presents a great fire-danger.

Distance-Photography with Infra-Red Rays

Certainly we have reason to believe that we have only reached the beginning of the scientific applications of photography, particularly in the application of radiations beyond those of the visible spectrum. Much has been done with the rays beyond the ultra-violet; it is known that those invisible rays are capable of being transmitted through glass, and that other rays still further on may be transmitted through quartz, though not through glass. Some time ago Prof. R. W. Wood, of Johns Hopkins University, startled the world with photographs made with the aid of radiations at the infra-red and ultra-violet ends of the scale, and now comes the announcement that an alizarin blue dye has been found which, when used in conjunction with silver nitrate, carries the sensitiveness of photographic plates far down into the infra-red, and also shortens the exposure with the yellow screen. Remarkable photographs of mountain-ranges have been made with plates so sensitized. In this connection *Photographische Industrie* states that by the use of a suitable filter and plates sensitive to infra-red rays, remarkably clear photographs may be made through a misty atmosphere. The following infra-red sensitizer is recommended:

Alcohol	200 cc.
Ammonia	4 cc.
Alizarin Blue S.	0.04 g.
Silver nitrate (10-percent sol.)	5 drops

Mix the ingredients in the order given, bathe the plate for three minutes and dry rapidly over a dessicating-agent.

◆

Every face talks the better when it talks without saying anything.—*David de la Gamme.*

THE ROUND ROBIN GUILD MONTHLY COMPETITION

For Beginners Only

Closing the last day of every month. Address all prints to PHOTO-ERA, Round Robin Guild Competition, 383 Boylston Street, Boston, U. S. A.

Restrictions

All Guild members are eligible in these competitions provided they never have received a prize from Photo-Era other than in the Beginners' Class. Any one who has received only Honorable Mention in the Photo-Era Monthly Competition for advanced workers still remains eligible in the Round Robin Guild Monthly Competition for beginners; but upon winning a prize in the Advanced Class, one cannot again participate in the Beginners' Class. Of course, beginners are at liberty to enter the Advanced Class whenever they so desire.

Prizes

First Prize: Value $5.00; *Second Prize:* Value $2.50; *Third Prize:* Value $1.50; *Honorable Mention:* Those whose work is worthy will be given Honorable Mention.

A certificate of award, printed on parchment paper, will be sent on request.

Subject for each contest is "**General**"; but only original prints are desired.

Prizes may be chosen by the winner, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in Photo-Era, or in books.

Rules

1. These competitions are free and open to all members of the Round Robin Guild. Membership is free to all subscribers; also to regular purchasers of Photo-Era on receipt of their name and address, for registration, and that of their dealer.

2. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

3. *Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data.* ***Criticism on request.***

4. *Each print entered must bear the maker's name, address, Guild-number, the title of the picture and the name and month of the competition, and should be accompanied by a letter,* SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what contest it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of Photo-Era, unless otherwise requested by the contestant. If suitable, they will be published in Photo-Era, full credit being given.

6. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15, unless they are packed with *double thicknesses of* ***stiff*** *corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express very cheaply and with indemnity against loss.

Awards — Beginners' Contest

Closed November 30, 1915

First Prize: Milton M. Bitter.
Second Prize: C. H. Judson.
Third Prize: J. Louis Cunningham.
Honorable Mention: Lawrence C. Byck, Ralph D. Count, Martha Curry, J. F. Eden, Louis R. Murray, John J. Neuer, John H. Pierce, Pitt P. Pinckney, H. B. Rudolph, C. Howard Schotofer, M. C. Still, A. S. Upton, A. J. Voorhees, Ralph B. Williamson, William J. Wilson.

Special commendation is due the following workers for meritorious prints: Margaret Anderson, Napoleon M. Bernier, Jr., Orton Horace Clark, J. R. Golden, J. K. Hodges, M. de Leon Imus, V. Max Kennery, Harry D. Pink, Jacob Pudliner, Mrs. H. G. Reed, F. W. Ruttzer, W. Stelcik, Cavett V. V. Turner, J. H. Woodhead.

Why Every Beginner Should Compete

The trouble with most competitions is that they place the beginner at a disadvantage. If advanced workers be allowed to compete, beginners have little chance to win prizes, and so quickly lose interest after a few trials.

There are two monthly competitions in which prints may be entered with prizes commensurate with the value of the subjects likely to be entered. They are: The Round Robin Guild Competition and the Photo-Era Competition. The former is the better one for a beginner to enter first, though he may, whenever it pleases him, participate in the latter.

As soon as one has been awarded a prize in the Photo-Era Competition, he may consider himself an advanced worker, so far as Photo-Era records are concerned, and after that time, naturally, he will not care to be announced as the winner of a prize in the Beginners' Class, but will prefer always to compete in the Photo-Era Competition for advanced workers. In accordance with this natural impulse, it has been made a rule by the Publisher that prize-winners in the Advanced Class may not compete in the Beginners' Class.

To measure skill with other beginners tends to maintain interest in the competition every month. Competent judges select the prize-winning prints, and if one does not find his among them there is a good reason. Sending a print which failed to the Guild Editor for criticism will disclose what it was, and if the error be technical rather than artistic, a request to the Guild Editor for suggestions how to avoid the trouble will bring forth expert information. The Round Robin Guild Departments form an endless chain of advice and assistance; it remains only for its members to connect the links. To compete with others puts any one on his mettle to achieve the best that is in him, and if, in competing, he will study carefully the characteristics of prize-winning prints every month, and use the Guild correspondence privilege freely, he cannot help but progress.

Answers to Correspondents

Subscribers and regular readers wishing information upon any point in connection with their photographic work are invited to make use of this department. Address all inquiries to Correspondence Department, PHOTO-ERA, *383 Boylston Street, Boston, U. S. A. If a personal reply is desired, a self-addressed, stamped envelope must be enclosed.*

H. W. J.— The **Fraunhofer Lines**, in spectrum analysis, are the transverse dark lines observed when viewing the solar spectrum in a spectroscope.

D. A. P.— **To develop a panchromatic plate,** which is sensitive to all colors, that light must be used by which one can see the most with the least possible illumination, which is a green safelight. Such a safelight usually consists of a sheet of glass coated with a bright yellow gelatine film, and another sheet coated with a bright green film, bound face to face, with a thick sheet of green paper between. Obviously these colors must be accurately adjusted in the spectroscope and by trial with the plates. Every manufacturer of panchromatic plates either sells a suitable safelight or recommends one, and the camerist will do well to adopt it.

W. C. R.— **The role of potassium metabisulphite in the developer** is purely that of a preservative. As such it is conceded to be more satisfactory than the usual oxalic acid in a pyro-formula. For 30-minute development at a temperature of 65 degrees the following is excellent:

A.	Water	16	ounces
	Potassium metabisulphite	70	grains
	Pyro	1	ounce
B.	Water	16	ounces
	Sodium sulphite, anhydrous	3	ounces
C.	Water	16	ounces
	Sodium carbonate, anhydrous	1	ounce

For use take ¾ ounce of each stock-solution and make up to 48 ounces with water.

J. G.— **To photograph mahogany furniture** so that the grain will show, employ a panchromatic plate and an orange-red filter, such as the Wratten & Wainwright Tricolor A. This will record the greatest possible contrast between the lighter and darker portions of the wood, and so make the most of the beauty of the grain. For very dark, old mahogany or rosewood it may be necessary to employ a deep-red filter, such as the Wratten & Wainwright F. This should be avoided if possible, however, because the manner in which it overcorrects all lighter tones tends to give a general impression of untruth.

A. J. V.— **Most developers oxidize and darken in the light and air,** some of them more than others, and much more rapidly in solution than in a dry state. This accounts for the use of orange-glass bottles, paraffined stoppers and sulphites and acids as preservatives in solutions. It is a wise precaution to keep solutions in orange-glass bottles as well as the dry developer itself, or else to store it in a dark place.

Pyro discolors rapidly in solution unless preserved under as nearly perfect conditions as possible. There seems to be a growing belief that potassium metabisulphite is the best preservative. Hydroquinone keeps well in solution, as does metol in the presence of alkaline sulphites. In a solid state metol keeps indefinitely. Potassium metabisulphite crystals oxidize upon exposure to air, although more slowly than sulphites. In doing so a white powder forms on the crystals, which should be removed before the crystals are used. The salt should also have a strong sulphurous odor when in good condition. Keep the bottle tightly corked.

"BE IT EVER SO HUMBLE, THERE'S NO PLACE LIKE HOME" J. L. CUNNINGHAM
THIRD PRIZE — BEGINNERS' CONTEST

Soda salts, such as carbonate and sulphite should be anhydrous, as they are less readily affected by the action of the air. Sulphite, for instance, is gradually oxidized to sulphate with a consequent lowering of the percentage of sulphurous acid, which impairs its preservative effect. On the other hand, the dry salt has a slight tendency to absorb moisture and harden, but this disadvantage is small in comparison with the change in composition of the crystals, because the lumps may be broken up readily.

In solution, anhydrous sulphite keeps no better than crystal. To test either salt for purity, add a little hydrochloric acid to a solution and then a few drops of barium chloride solution. A milkiness or precipitate denotes the existence of sulphate, which acts as a restrainer in the developer. Sulphite solution over one month old should not be expected to be full strength unless made with distilled water and kept in full, well stoppered bottles.

The exact strength of anhydrous sodium carbonate can be assured by heating it in a basin over a spirit-lamp, any moisture being driven off. As the anhydrous salt readily absorbs ten percent of moisture it should be kept in well stoppered bottles.

Print-Criticism

Address all prints for criticism, enclosing return-postage at the rate of one cent for each two ounces or fraction thereof, to Correspondence Department, Photo-Era, *383 Boylston Street, Boston, U. S. A. Prints must bear the maker's name and address, and be accompanied by a letter, sent separately, giving full particulars of date, light, plate or film, stop used, exposure, developer and printing-process.*

H. F. P.—"Drifting Clouds" is unique and interesting as a subject, and the spacing is good; yet the subject-material is so commonplace that one's interest is not greatly aroused. This effect of low-lying clouds is not often photographed although often found in nature.

G. S. T.— You have a pleasing composition in "Landscape," but the diffusion is rather too great for the size of the print. The composition is attractive as a study in tone, but one is left in considerable doubt as to what the light speck on the water may be. Perhaps a smooth matte paper would disclose this. Your other prints are of similar character. "Chaos" is interesting as a study in spacing, but the average person would hardly consider that it contains enough material for a photograph.

W. R. B.— Your photographs through arches with silhouetted figures are exceedingly interesting, although that through the arch in the City Hall, Philadelphia, is rather more fantastic in shape, and so less pleasing.

L. R. M.— All of your subjects appear to be underexposed and forced in development, and many of them are badly halated. We have published some interesting articles on halation — a subject about which you might read with interest. Undoubtedly the best scheme for avoiding halation is to use double-coated plates and develop in the tank with a hydro-metol formula containing no carbonate. This formula you will find in Photo-Era for July, page 14. The standard Orthonon plate should give good results with this treatment.

P. E. K.— Your photograph of the "East Entrance to the State Capitol," Hartford, Conn., is an excellent piece of work except that the lens appears not to have covered at the upper right-hand corner; presumably the rising front has been forced above a reasonable limit. Your photograph of the entire State Capitol suffers from a somewhat unfortunate viewpoint. The large mortar at the left is so large in the picture-space as to vie with the building itself.

C. H. K.— In composition and general quality your architectural work is excellent, although it is obvious that some of the clouds in your various subjects have been worked-in, or at least worked-up; notably in your photograph of the D. A. R. Hall, in which, by the way, your vertical lines are not in every instance plumb.

M. H. B.— The viewpoints of your architectural work seem to be well taken for the most part, although in both of your photographs of the White House the shrubs in the immediate foreground are unfortunate, for they are out of focus and appear to have moved during exposure. The idea of a broad shadow in the foreground, as in the photograph of the D. A. R. Building, is very attractive. The scheme demands that the shadow be transparent rather than in black and without detail. All of your work seems to be undertimed and forced in development.

W. R. L.— In most respects your photograph of the "Library of Columbia University" is a good piece of technical work. Some of the vertical lines are out of plumb, however, and it is unfortunate that the flag is so badly blurred. Have you selected the best possible viewpoint from which to photograph this building? It would seem desirable to avoid placing anything, such as a huge flower-pot or candelabrum, directly in front of the doorway. Also it would seem that a position somewhat to the left of the one chosen would take the other façade of the building well under the dome and give a better effect of unity.

A. S. H.— Marines such as you have entered in one of our recent competitions, in which a sail-yacht occupies so small an area, require excellent cloud-effect, which is totally absent in both subjects. Trimming would work quite an improvement, making it possible to give decidedly more space either to water or sky, and making it possible to place the sail-yacht obviously to one side of the center of the print.

If you will try one of the enlarging-gaslight papers, such as Cyko, Rexo or Artura, you will find that far more of the character of the original small negative will be retained, and that the results will be far more pleasing than the flat, grainy appearance of your prints.

K. S. R.— Why not trim "On Lake Oswego" so that the distant waterline will be level, and at the same time remove most of the foreground, for the picture is entirely in the middle-distance, and the foreground is disturbing? The eyes insist upon returning to it despite its unimportance.

ALONG THE SANDY SHORE C. HOWARD SCHOTOFER

HONORABLE MENTION — BEGINNERS' CONTEST

Photo-Era Exposure-Guide

Calculated to give Full Shadow-Detail, at Sea-Level, 42° N. Lat.
For altitudes up to 5000 feet no change need be made. From 5000 to 8000 feet take ¾ of the time in the table. From 8000 to 12000 feet use ½ of the exposure in the table.

Exposure for average landscapes with light foreground, river-scenes, light-colored buildings, monuments, snow-scenes with trees in foreground. For use with Class 1 plates, stop F/8, or U. S. 4. For other plates, or stops, see the tables on the opposite page.

***These figures must be increased up to five times if the light is inclined to be yellow or red.**
†Latitude 60° N. multiply by 3; 55° × 2; 52° × 2; 30° × ¾.
‡Latitude 60° N. multiply by 2; 55° × 2; 52° × 1½; 30° × ¾.
¶Latitude 60° N. multiply by 1¼; 55° × 1; 52° × 1; 30° × ½.
§Latitude 60° N. multiply by 1¼; 55° × 1; 52° × 1; 30° × ½.

	MONTH AND WEATHER																			
	JAN., NOV., DEC. †					FEB., OCT. ‡					MAR., APR., AUG., SEPT. ¶					MAY, JUNE, JULY §				
HOUR	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull
11 A.M. to 1 P.M.	1/32	1/16	1/8	1/4	1/2	1/32	1/16	1/8	1/4	1/2	1/50	1/25	1/12	1/6	1/3	1/60	1/30	1/15	1/8	1/4
10–11 A.M. and 1–2 P.M.	1/25	1/12	1/6	1/3	2/3	1/25	1/12	1/6	1/3	2/3	1/40	1/20	1/10	1/5	1/2	1/60	1/30	1/15	1/8	1/4
9–10 A.M. and 2–3 P.M.	1/12*	1/6*	1/3*	2/3*	1*	1/16	1/8	1/4	1/2	1*	1/40	1/20	1/10	1/5	1/2	1/50	1/25	1/12	1/6	1/3
8–9 A.M. and 3–4 P.M.						1/5*	1/2*	1*	1 1/2*	3*	1/30	1/15	1/8	1/3	2/3	1/30	1/15	1/8	1/4	1/2
7–8 A.M. and 4–5 P.M.											1/20	1/10	1/5	1/2	3/4	1/20	1/10	1/5	1/3	2/3
6–7 A.M. and 5–7 P.M.											1/15*	1/8	1/2*	3/4*	1*	1/15	1/8	1/4	1/2	3/4
5–6 A.M. and 6–7 P.M.																1/10*	1/5*	1/3*	2/3*	1 1/2*

The exposures given are approximately correct, provided the shutter-speeds are accurately marked. In case the results are not just what you want, use the tables merely as a basis and increase or decrease the exposure to fit the conditions. Whenever possible keep the shutter-speed uniform and vary the amount of light when necessary by changing the stop. **Focal-plane shutters require only one-third of the exposures stated above.**

SUBJECTS. For other subjects, multiply the exposure for an average landscape by the number given for the class of subject.

1/8 Studies of sky and white clouds.

1/4 Open views of sea and sky; very distant landscapes; studies of rather heavy clouds; sunset- and sunrise-studies.

1/2 Open landscapes without foreground; open beach, harbor- and shipping-scenes; yachts under sail; very light-colored objects; studies of dark clouds; snow-scenes with no dark objects; most telephoto-subjects outdoors; wooded hills not far distant from lens.

2 Landscapes with medium foreground; landscapes in fog or mist; buildings showing both sunny and shady sides; well-lighted street-scenes; persons, animals and moving objects at least thirty feet away from the camera.

4 Landscapes with heavy foreground; buildings or trees occupying most of the picture; brook-scenes with heavy foliage; shipping about the docks; red-brick buildings and other dark objects; groups outdoors in the shade.

8 Portraits outdoors in the shade; very dark near objects, particularly when the image of the object nearly fills the plate and full shadow-detail is required.

16 to 48 Badly-lighted river-banks, ravines, glades and under the trees. **Wood-interiors** not open to the sky. **Average indoor-portraits** in a well-lighted room, light surroundings.

PLATES. When plates other than those in Class I are used, the exposure indicated above must be multiplied by the number given at the head of the class of plates.

For Perpetual Reference

For other stops multiply by the number in the third column

As all the figures in the table opposite are based upon the use of stop F/8, or U. S. 4, it does not appear here among the ratios for other stops.

U. S. 1	**F/4**	**× 1/4**
U. S. 2	**F/5.6**	**× 1/2**
U. S. 2.4	**F/6.3**	**× 5/8**
U. S. 3	**F/7**	**× 3/4**
U. S. 8	**F/11**	**× 2**
U. S. 16	**F/16**	**× 4**
U. S. 32	**F/22**	**× 8**
U. S. 64	**F/32**	**× 16**

Example

The factors that determine correct exposure are, first, the strength of light; second, the amount of light and dark in the subject; third, speed of plate or film; fourth, the size of diaphragm used.

To photograph an average landscape with light foreground, in Feb., 2 to 3 P.M., bright sunshine, with plate from Class 1, R. R. Lens, stop F/8 (or U. S. 4). In the table look for "Hour," and under the column headed "Bright Sunshine," note time of exposure, 1/16 second. If a smaller stop is used, for instance, F/16, then to calculate time of exposure multiply the average time given for the F/8 stop by the number in the third column of the table for other stops, opposite the diaphragm chosen. The number opposite F/16 is 4. Multiply 1/16×4=1/4. Hence, the exposure will be 1/4 second.

For other plates consult the table of plate-speeds. If a plate from Class 1/2 be used, multiply the time given for average exposure, F/8 Class 1, by the number of the class. 1/16×1/2=1/32. Hence, the exposure will be 1/32 second.

Speeds of Plates on the American Market

Class-Numbers. No. 1, Photo-Era. No. 2, Wynne. No. 3, Watkins

Class 1/3, P. E. 156, Wy. 350, Wa.
Ilford Monarch
Lumière Sigma
Marion Record
Seed Graflex
Wellington Extreme

Class 1/2, P. E. 128, Wy. 250, Wa.
Ansco Speedex Film
Barnet Super-Speed Ortho.
Central Special
Cramer Crown
Eastman Speed-Film
Hammer Special Ex. Fast
Imperial Flashlight
Seed Gilt Edge 30
Wellington 'Xtra Speedy

Class 3/4, P. E. 120, Wy. 200, Wa.
Barnet Red Seal
Cramer Instantaneous Iso.
Defender Vulcan
Ensign Film
Hammer Extra Fast, B. L.
Ilford Zenith
Imperial Special Sensitive
Paget Extra Special Rapid
Paget Ortho. Extra Special Rapid

Class 1, P. E. 111, Wy. 180, Wa.
American
Ansco Film, N. C.
Atlas Roll-Film
Barnet Extra Rapid
Barnet Ortho. Extra Rapid
Central Comet
Imperial Non-Filter
Imperial Ortho. Special Sensitive
Kodak N. C. Film
Kodoid
Lumière Film and Blue Label
Marion P. S.
Premo Film-Pack
Seed Gilt Edge 27
Standard Imperial Portrait
Standard Polychrome
Stanley Regular
Vulcan Film
Wellington Anti-Screen
Wellington Film
Wellington Speedy
Wellington Iso. Speedy

Class 1 1/4, P. E. 90, Wy. 130, Wa.
Cramer Banner X
Cramer Isonon
Cramer Spectrum
Defender Ortho.
Defender Ortho., N.-H.
Eastman Extra Rapid
Hammer Extra Fast Ortho.
Hammer Non-Halation
Hammer Non-Halation Ortho.
Seed 26x
Seed C. Ortho.
Seed L. Ortho.
Seed Non-Halation
Seed Non-Halation Ortho.
Standard Extra
Standard Orthonon

Class 1 1/2, P. E. 84, Wy. 160, Wa.
Cramer Anchor
Lumière Ortho. A
Lumière Ortho. B

Class 2, P. E. 78, Wy. 120, Wa.
Cramer Medium Iso.
Ilford Rapid Chromatic
Ilford Special Rapid
Imperial Special Rapid
Lumière Panchro. C

Class 3, P. E. 64, Wy. 90, Wa.
Barnet Medium
Barnet Ortho. Medium
Cramer Trichromatic
Hammer Fast
Ilford Chromatic
Ilford Empress
Seed 23
Stanley Commercial
Wellington Landscape

Class 5, P. E. 56, Wy. 60, Wa.
Cramer Commercial
Hammer Slow
Hammer Slow Ortho.
Wellington Ortho. Process

Class 8, P. E. 39, Wy. 30, Wa.
Cramer Contrast
Cramer Slow Iso.
Cramer Slow Iso. Non-Halation
Ilford Halftone
Ilford Ordinary
Seed Process

Class 100, P. E. 11, Wy. 3, Wa.
Lumière Autochrome

OUR ILLUSTRATIONS

WILFRED A. FRENCH

Different from footprints on the sand, those made in the snow seem to stir the imagination to a greater degree, for the question rises for utterance: "Whither do they lead?" In a spot a long way from human habitation, there is the element of doubt, if not of anxiety, and, in any case, of interest. To the initiated, however, the scene which Mr. Boyden has portrayed — see our front-cover and page 62 — is devoid of mystery, for the tracks are what he, himself, had made. He simply stopped in his tracks, turned about and made the picture. Instead of representing a monotonous stretch of snow, Mr. Boyden — as skilful a painter as he is a photographer, his use of the camera having preceded his desire to become a master of the brush — pictured a deserted winter-scene, replete with interest and pictorial beauty. Indeed, the glare that usually marks a "snowy mantle" is entirely absent; even the highlights are not pure white. He obtained his effect by judiciously utilizing the slanting rays of the sun — long shadows. The main interest is in the foreground, and diminishes as the line of depressions recedes and vanishes in the distance. As happens frequently, the composition affords two complete pictures, the more attractive one being the clouded landscape, at the top. Data: February, 4 P.M.; sun obscured by clouds; Goerz Celor No. 7, 14-inch focus; 8 x 10 Standard Orthonon; pyro-soda; 8 x 10 gaslight-print.

The illustrations to the article on clouds, by Mr. Davis, are chiefly explanatory, and are not to be taken as examples of that artist's best work. A better opportunity is afforded on page 82, this issue.

Although not free of faults, the picture of a young girl reading a book, page 57, possesses much charm. The picture was made a number of years ago, at a time when cutting down prints without regard to the physical contours of the sitter in order to produce a striking, bizarre effect had considerable vogue. This method of pictorial surgery was justly condemned by every sensible critic, and, fortunately, it was short-lived. Aside from representing a surrender to a temporary caprice, the "Home-lesson" offends by incongruous and diverting highlights — the collar, hand and book. Thus, the "Home-lesson" becomes an "object-lesson" in what to avoid, and, what is more, its faults are quite easy to avoid. No data.

The home of George Washington, page 60, becomes more and more sacred to true, loyal Americans as the years roll on. This stately, old-time homestead is, indeed, the Mecca of Americans in reality as well as in spirit. How the mind will conjure up the events in the career of the saviour of his country! It will halt with anxiety, followed by a sense of relief when it reaches the siege of Yorktown, where, by Divine Providence, at the most critical moment in the struggle for freedom, the Continental Army succeeded, with the aid of La Fayette. The portrayal, by Carl H. Kattelmann, of the shrine — at which on February the twenty-second all loyal hearts will bow in reverence — is manifestly the work of a sincere admirer of George Washington. The building is seen to crown a slight eminence, on the slope of which are clustered the shadows of noble trees, forming an appropriate and expressive picture, one somewhat different from those one has been accustomed to see. Data: August, 1 P.M.; sunshine; 5 x 7 Premo; Kodak Anastigmat; $6\frac{1}{2}$-inch focus; stop, F/16; 3-time color-screen; 1 second; Standard Ortho; pyro, tank; 5 x 7 print on Azo A Hard.

Charles E. Vaughan, the poetic interpreter of an inspiring scene charged with mystery and promise, and Ina L. Cook, a sympathetic collaborator stimulated by her willing muse, have achieved an extremely happy labor of love. Picture and poem are blended into one harmonious whole, like a perfect song. But let each speak for itself. Data: May 31, 1915, at sunrise; slightly hazy, due to light fog rising; Graflex $3\frac{1}{4}$ x $5\frac{1}{2}$; Goerz 7-inch Dagor; stop, full opening, viz., U. S. 2.9; about $\frac{1}{75}$ second (note the man at extreme left); Eastman N. C. film; Celeritas; postcard Noko print.

The effect of early morning in the picture by C. H. Schotofer, page 71, has been interpreted very successfully. The pictorial composition also merits high praise. The group of men, at the right, and obviously unconscious of being photographed, is balanced unobtrusively by the approaching team. The interesting objects take their places very quietly. The sense of illusion is complete. Data: October, 7 A.M.; sun shining through mist; Icarette, Model A; R.R. lens; stop, F/8; $\frac{1}{25}$ second; Eastman N. C. film; pyro, tank; enlarged on Cyko Plat.

"A Veteran," page 73, is a reproduction of an old print — it has been in possession of Photo-Era for a number of years, having been given the Editor in 1907. One of our friends said that he met the old army-man in the Spellman studio, Detroit, about eight years ago, a striking-looking model with heavy bronzed features and snow-white hair and beard. He considered the picture one of the best Spellman ever made. No data.

The group, page 79, that serves as an admirable example of home-portraiture, is by one of the most successful specialists in New England — Katherine B. Stanley. Although the infant is clad entirely in white — always a trying problem for the artistic photographer — the dress is judiciously subdued and filled with beautiful gradations. The group breathes that at-home feeling which photographers are so eager to catch. This is one of the factors of Miss Stanley's success as a home-portrait photographer, and whose pictures are always worthy close study. Data: April, noon; Eastman Home-Portrait camera; Bausch & Lomb-Zeiss Tessar II B; $8\frac{1}{2}$-inch focus, used at full opening; $\frac{1}{25}$ second; Eastman tank; 5 x 7 Artura Sepia print; hot gold toning-bath.

The Photo-Era Monthly Competition

That the spirit of the present competition, "Vacation-Pictures," has been well carried out is evident from the prints that have been accorded official recognition, and that speak of radiant sunshine and the invigorating zephyrs.

A complete, sentimental story is suggested by the engaging figure seated on the strand, page 80. One may be sure that the fortunate camerist conserves pleasant recollections of his summer-vacation at some popular seaside-resort. His "summer-girl"— shall we call her? — is easily and gracefully posed before the artist; so well, indeed, that she seems an inseparable part of this foam-bordered beach. The lighting on face and hands delights the eye of the connoisseur, and the dark bathing-costume, too, betokens fine phototechnical skill. Data: August, 2 P.M.; hazy sunlight; 5 x 7 Korona camera; R.R. lens; stop, U. S. 8; $\frac{1}{50}$ second; Hammer Special; pyro, tank; print, Azo E, toned in hypo-alum.

From Mr. DeBevoise's sunny incident one turns to one quite opposite in character — a cool, shady nook, page 81. The boys are just about to turn the boat with a view to making a landing, or to go farther up the stream. The plan of the composition is finely conceived, and the position of the boat with its occupants is particularly well managed. Data: August, noon; good light; 14½-inch Verito; stop, F/4; quick bulb exposure; 6½ x 8½ Orthonon; pyro, tank; direct print on Argo B.

The farmhouse in its attractive setting of light and shadow forms a delightful picture. Page 83. One can scarcely expect anything less successful from the master-pictorialist, William S. Davis. The plain dwelling overshadowed by trees; the shady road; the vegetable-garden; the cloud-embellished sky — all contribute to this beautiful ensemble. Note, too, how prudently the light was chosen; for to this circumstance the composition owes its success. Data: Clear October day, 12.30 P.M.; $\frac{1}{15}$ second; 6-inch Ilex Anastigmat; stop, F/6.3; Wellington Anti-Screen; clouds printed-in; enlargement on Velours Black.

The Beginners' Competition

Milton M. Bitter deserves high praise for selecting ordinary camera-material and investing it with beauty. Page 84. The railway-tracks — generally quite unattractive — here assume an undeniable charm in their uncommon perspective: the banks, take either side, are edged with trees; the sky is filled with radiance — all enclosing the railway-bridge of angular construction and devoid of all pictorial charm, yet appearing here, by reason of its pleasing accessories, as an engaging object. But lo! the imp with scissors agape is eagerly awaiting his chance. Yes; he vows that the horizon-line divides the picture virtually in halves; hence the foreground needs curtailing, else the top must submit to the operation. What say those who view this picture critically? Data: Early October, 1.30 P.M.; bright light; 5 x 7 Conley camera; Gundlach-Manhattan Convertible R.R. lens; Ingento 3-time color-screen; exposure, three times $\frac{1}{25}$ second in rapid succession, when sun shone between clouds, with Ilex "General" automatic self-setting shutter; Seed L. Non-Hal. Ortho; Cramer's pyro-acetone; direct print on Cyko Professional Plat. through an Eastman Portrait-Film from which the emulsion and gelatine had been removed; exposed 50 seconds, 12 inches from an ordinary fish-tail gas-flame; print developed 1 minute in Cyko H. M. tube-developer at 65 degrees.

Who of the gentler sex but will express her delight with the baby in the bowl! Page 86. These exclamations will surely be numerous and surely well deserved. The technique, too, merits high praise, the flesh-tints being well rendered and a general soundness marking the nude figure — the little daughter of the camerist — despite the unusually rapid exposure. Data: May 9, A.M.; good sunlight outside; Goerz Taro Tenax 3¼ x 4¼; 5-inch Dogmar F/6.3, used at full opening; $\frac{1}{50}$ second; Marion Record plate; Rytol; enlargement on Velours Black Silk.

The presentation of the unpretentious little home, page 88, is very pleasing, and the workmanship clean-cut. Good judgment is shown in the choice of illumination, and, with its excellent chemical qualities, the negative should yield an enlargement of almost any desired dimensions. Data: August, 1915, 1.30 P.M.; dull light; Eastman speed-film; 3 A Graflex, B & L-Zeiss Tessar Ic, F/4.5, 7¼-inch focus; stop, F/6.3; $\frac{1}{100}$ second; Eastman tank; Azo Grade E. Hard; M.Q.

Notwithstanding its narrow escape from being freakish in appearance, Mr. Schotofer's shore-scene has much solid merit. There is a degree of imaginative quality in the receding couple, though the nature of the promenade is not at all obvious. Data: August, 6 P.M.; Icarette, Model A; R.R. lens; stop, F/8; $\frac{1}{25}$ second; Eastman film; tank-developed in pyro; enlarged on Enlarging-Cyko Plat.

Ferrous Oxalate Intensification

The old-time developer, ferrous oxalate, has undoubtedly come into wider use, due to the scarcity and high price of the more commonly employed modern reducers. Since formulæ were published in this department, October, 1914, metol has become unobtainable in Boston and most other cities, and pyro, hydroquinone and most of the other popular agents are selling at very high prices.

Those who were in the habit of using their alkaline developers for darkening after bleaching in intensification, and who have adopted ferrous oxalate, will be interested to know that they may use it for the same purpose, with the precaution, however, that the ferrous oxalate developer is freshly prepared and in good condition, or else the negative may be badly stained. The advantage of this method lies in the fact that after bleaching, the white silver and mercurous chloride image is reduced to metallic silver and mercury, thus approximately doubling the printing-density. So far as is known the image thus obtained is quite stable, and there is no selective action either in the highlights or shadows; moreover, the operation of bleaching and blackening may be repeated as many times as desired, a corresponding increase of strength resulting each time.

First bleach the well washed negative in:

Water	10 ounces
Mercuric chloride	120 grains
Hydrochloric acid	24 minims

Upon complete bleaching wash the negative in two or three changes of water, and then pass it for two or three minutes each through three acid baths:

Water	12 ounces
Hydrochloric acid	1 dram

This prevents the mercury from combining with the gelatine to the detriment of permanency. Then wash fifteen to twenty minutes in running water, and blacken in a ferrous oxalate developer composed of six parts of a saturated solution of potassium oxalate and one part of a saturated solution of ferrous sulphate. Place the blackened negative into a final acid bath like those already mentioned, and then wash thoroughly and dry.

A Method of Reversal

A method to obtain a negative from a negative by direct printing is suggested in a recent issue of *Zeitschrift f. Reproduktionstechnik*. It consists in bathing the unexposed sensitive plate in a three-percent solution of potassium bichromate, drying, exposing to sunlight for four minutes, washing and finally developing with a slow-working developer.

* * *

You shall be mistaken in art if you look only at your own mind.—*Alfred Stevens*.

ON THE GROUND-GLASS

WILFRED A. FRENCH

The Connoisseur's Bête Noire

One would think that by this time any intelligent person would instantly reject a portrait of himself in which face and hands are made to appear exactly as white as his shirt-collar. On the contrary, an acquaintance of mine, of New York, sent his sister — as a Christmas gift — his portrait made by one L——k, a local photographer. Face, neck, hands, collar and cuffs were of a uniformly dazzling white, to which atrocious effect the retoucher had contributed his full share.

This photograph is a libel on the craft. I have heard some men say about such portraits of themselves (deprecatingly): "I suppose it can't be helped; it 's the nature of the beast." Such persons do not appear to have an exalted opinion of photography. At least, they show a woeful degree of ignorance on the subject. They are too busy to notice the beautiful specimens of sanely rendered portraits in the show-cases of master-photographers. How are they to be enlightened? Who will undertake this missionary work?

It 's of no use to give the offending photographer a coat of tar and feathers and order him to quit the city, for he is less to blame than his acquiescent patron. In his eagerness to shorten the work, the photographer curtails the exposure and development, and probably says to himself, like the revivalist who placed a counterfeit nickel in the contribution-bag, "Them heathens don't know the difference."

Compensating Disappointments

How many amateurs know the beauty and permanence of a Kallitype, or of a plain salted print? With the temporary disappearance from the American market of several important coal-tar products, such as metol, amateurs have begun to look around for a substitute developer for gaslight-papers. If they search in vain, they may have to resort to daylight-papers, and utilize the rays of the sun, whenever available. This means to get up early in the morning and work before breakfast! Thus we resuscitate the old maxim — now almost forgotten —

> "Early to bed, and early to rise,
> Makes a man healthy, wealthy and wise."

Therefore the wise man will revive some of the earlier printing-processes, Kallitype, for example, described so well by James S. Escott in April Photo-Era, 1907, and accompanied with superb illustrations. Eastman's Water-Developing Platinum Paper, a simple, satisfactory medium, with all the characteristics of platinum, developed in warm water and cleared in acidulated H_2O, had quite a vogue about seven years ago. Incidentally, there is the plain salted print, of quiet beauty and indubitable permanence — a sheet of salted Saxe paper floated on a silver bath, printed, toned and fixed in plain hypo.

And to think of the evenings! Instead of passing them at the camera club or in some ill-ventilated closet, turning out prints on gaslight-papers, one may sit in a cosy arm-chair, reading and talking to wifie, helping the children with their lessons, worrying the dog — in fact, getting acquainted with one's own family. A neighboring friend will now feel encouraged to drop in on an evening, and the first thing one knows a game of cards is in progress! Or, if photography is not to be forgotten, what is the matter with bringing out the opaque projector and showing prints or picture-postcards? One can easily borrow a different set from a friend and lend one's own in return. So this so-called metol famine is not the ogre it has been painted. There are worse ones than that. But let us be cheerful.

Osculation ad Libitum

To print a kiss upon her lips
He thought the time was ripe;
But when he went to press, she said:
"I do not like your type."
Boston Transcript.

A kiss he printed on her lips
And showed her no contrition,
Because the artful minx inquired:
"Well, when 's the next edition?"
Birmingham Age-Herald.

A kiss he printed on her lips,
And she made this oration:
"Please, please, continue doing that!
It boosts my circulation!"
New York Evening Sun.

A kiss he printed on her lips,
But father was about;
He did n't like the ardent swain,
And so he led "it" out.
American Press.

A kiss he printed on her lips,
She smiled, the artful creature,
And modestly inquired of him,
"Was that a special feature?"
Moscow (Idaho) Star-Mirror.

He tried to kiss her lips again,
But could n't quite get at her;
She held a book in such a way
They were "next to reading matter."
Boston Courier.

He was no quitter; oh, not he;
So on he pressed, for fair.
The Silver Cup he 'd guarantee,
And won a kiss right there.
Photo-Era.

More Than He Is Worth

Irate Customer (to the proprietor of a photo-supply store) — "This is the second time that your clerk, 'Nobody Home,' has disappointed me. I ordered yesterday morning half a gross of 8 x 10 Cyko, and an 18 x 24 ferrotype plate. He said that both were in stock, and promised to send them before 5 P.M. yesterday. Neither goods not any explanation had come by to-day noon, so I called to see about it. He said he found the paper, but only a 10 x 14 plate, which he thought might not be large enough, so he did nothing further about the matter. Why did n't he telephone me? The telephone is right near his elbow."

Proprietor (soothingly) — "I am sorry, Mr. R. You see he gets only five dollars a week."

EVENTS OF THE MONTH

Announcements and Reports of Club and Association Meetings, Exhibitions and Conventions are solicited for publication

Death of Vero C. Driffield

In the death of Mr. Vero C. Driffield, November 14, at Widnes, in his sixty-eighth year, photography has lost one of its most ardent and eminent investigators. Born in 1848, he began the practice of photography as early as 1863, and finally spent six months in the studios of Henry Sampson in Southport. This was just prior to the commencement of his apprenticeship in mechanical engineering, which began in 1865. In 1871 he went to Messrs. Gaskell, Deacon & Co., alkali manufacturers, as engineer, later becoming manager of their Gaskell Deacon Works, on the organization of the United Alkali Co., Ltd.

In 1871, also, he first made the acquaintance of the late Dr. Hurter, which soon ripened into a firm friendship, due no doubt to the similarity of their tastes. Dr. Hurter first took a practical interest in photography in 1876, and their chemical investigations were soon begun. Their first paper was published in *The Journal of the Society of Chemical Industry*, in 1890, and their last collaborated paper appeared in the *Photographic Journal*, in 1898.

So revolutionary in character were the conclusions reached that even to-day the discussion has not altogether ceased, although the new principles have been accepted by progressive photographers in all countries, and by many plate-manufacturers, who have adopted the H. and D. speed-markings. Of course it is now realized that the dissentions were due very largely to misconceptions resulting from the loose use of technical terms in the earlier investigations of these men; but to Hurter and Driffield must be accorded the honor of first establishing the method of sensitometric measurement, which has contributed so much to the manufacture of dryplates on a scientific basis.

Von Hübl Decorated

Freiherrn von Hübl, a well-known Austrian photographic investigator and writer, has recently received, in recognition of important services during the past year, the *Ritterkreuz* of the Order of Leopold, with war-decoration.

The Federal Photographic Society

Last spring the camera-users of the government departments at Washington, D. C., organized for social purposes, and primarily for advancement in scientific photography. The movement is an important one, and once the society gets on its feet there is promise that something of the work of the Royal Photographic Society in England may be accomplished in America. Meetings are held on the second Friday of each month and occasional public lectures are given.

The officers of the society are: Prof. T. W. Smillie, Smithsonian Institution, Honorary President; Dr. L. H. Beeson, Agricultural Department, President; H. T. Cowling, Interior Department, Vice-president; A. A. Ruark, Agricultural Department, Treasurer; E. L. Crandall, Agricultural Department, Corresponding Secretary; F. B. Kaye, Navy Department, Secretary.

Notable Talks on Color-Photography

The annual meeting of the American Institute of Graphic Arts was held the evening of December 14 at the National Arts Club, New York. President Oswald presided. Five members of the board of directors were elected, as follows: Arthur W. Dow, Arthur S. Allen, F. A. Ringler, Edward B. Edwards, Ray Greenleaf.

Treasurer Willing introduced the noted art photographer, Dr. Arnold Genthe, who exhibited results of his experiments with color-photography, and in an interesting manner told of the satisfactory and unsatisfactory features of the processes now available.

The exhibits of the Autochrome-process were wonderful records of apparently all the colors of nature. The lecturer explained the process in detail.

Dr. Nathan T. Beers then showed what had been accomplished with color-photography in the surgical field. The process used by him was Kodachrome, a two-exposure method originated and to be marketed by the Eastman Company. The exhibits of Dr. Beers were Kodachromes at their best, for the doctor is an acknowledged master of this process. By the Kodachrome process two dryplate-negatives are made from the same object, immediately after each other. One negative is made through a green filter and the other through a red one. These negatives are then reversed into dyepositives, one being stained green and the other red and superimposed. When viewed by transmitted light they appear to record all the colors of nature, though naturally the blues and violets are lacking.

A New Ansco Office-Building

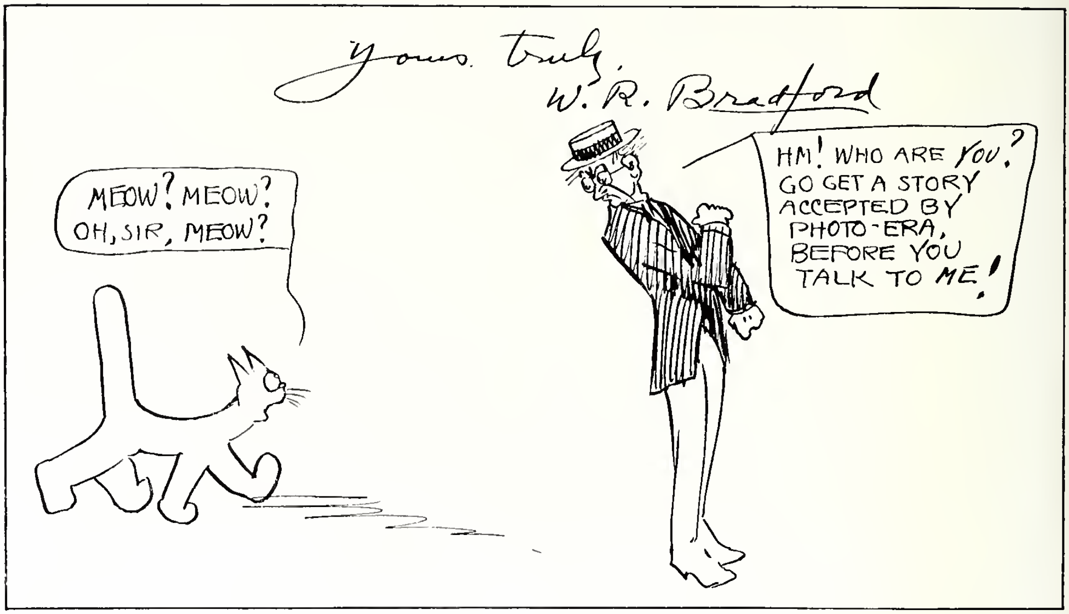
Land has recently been purchased in Binghamton, N. Y., for the new offices of the Ansco Company. It is expected that a $100,000 building of handsome appearance will be erected.

The Big 1916 Conventions

The date of the next annual convention of the P. A. of A., to be held at Cleveland, Ohio, will be decided definitely at a meeting of the Executive Board in January, but it will probably be July 10, because of the Shriners' and Rotarian conventions in the following weeks. The National Dealers' Convention, also to be held in Cleveland, will occur the week of March 6.

A Metol Substitute Invented

Dr. Charles J. Thatcher, a chemical expert of New York City, has taken out a patent for a new photographic developer having substantially the same composition as metol, of which there is a serious shortage in America, due to the war. If the new reducer, which has been named Kathol, fulfils the claims made for it, and can be manufactured successfully on a commercial basis, it will surely be welcomed, for American manufacturers so far have been unable to produce metol. Dr. Thatcher is a graduate of the University of Leipsic, and has made an extensive study of the manufacture and properties of the various developers.


Yours truly,
W. R. Bradford
MEOW? MEOW? OH, SIR, MEOW?
HM! WHO ARE YOU? GO GET A STORY ACCEPTED BY PHOTO-ERA, BEFORE YOU TALK TO ME!

AN IMPLIED COMPLIMENT

W. R. Bradford — Humorist

W. R. Bradford, who sailed before the mast for some time, and is now chief cartoonist of *The North American*, Philadelphia, has become better known to Photo-Era readers through his success as a participant in the "Interiors with Figures" competition, which he celebrated in unique fashion by a humorous sketch. (See picture and sketch in the July issue, 1915.) This was succeeded by several cartoons depicting the humorous side of photography.

Mr. Bradford's chief contribution to the pages of Photo-Era, however, is his article on panchromatic photography by gaslight (see the December issue, 1915), in which he revealed himself as a practitioner and writer of the first rank.

The camera, however, is his hobby, the humorist's pen and pencil being the means by which he "manages to feed and clothe the kiddies, and buy himself an occasional necktie." By the accompanying sketch our genial artist celebrated the news that the above-mentioned article had been accepted. A humorous illustrated story of photographic interest from his gifted brain will soon appear in Photo-Era.

The President Foils the Camera-Men

People of refined sensibilities throughout the country were indignant when they learned that President Wilson and his wife, who were spending their honeymoon at Hot Springs, Va., were being annoyed by photographers determined to snapshoot them.

The small army of motion-picture men and press-photographers was so persistent in its efforts to get pictures of the distinguished couple that the secret-service men were ordered to break every camera directed at him or his bride. One resourceful photographer provided himself with a powerful telephoto-equipment, enabling him to photograph persons a block away; but even he was able to get only a greatly blurred picture that purports to be the President and Mrs. Wilson closely followed by a secret-service man. The likenesses are utterly unrecognizable, and it is suggested that the scene was staged by a desperate and enterprising camera-man, and the production palmed off as a genuine though not entirely successful picture of the President and his bride. This appears to have been the net result of the photographic highwaymen's activity in intruding on the privacy of the President's wedding-journey.

Restrictions Upon the Traffic in Optical Instruments

An order has recently been issued by the Minister of Munitions which is of the utmost importance to all persons buying or selling certain kinds of optical instruments or dealing in them in any way throughout Great Britain. All such transactions are now prohibited without an express official permit given by the Director-General of Munitions Supply. This new interpretation of the Defense of the Realm Act includes the following instruments:

Prismatic binoculars and monoculars having a magnifying-power of five times or over.

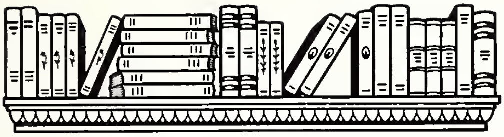
Galilean binoculars having object-glasses with a full diameter of one and three-quarters inches or more, and a magnifying-power of three and one-half to five times.

Terrestrial telescopes, portable, with an object-glass of one and one-quarter inches full diameter or more, and a magnifying-power of eleven times or more.

Telescopic or other sights for rifles.

Periscopes and hyposcopes, using optical means other than, or in addition to, plane mirrors.

Compasses, prismatic and the like, of an outer diameter of two and one-half inches or less, by means of which an azimuth angle can be read off simultaneously with the sighting of an object.



BOOK-REVIEWS

Books reviewed in this magazine, or any others our readers may desire, will be furnished by us at the lowest market-prices. Send for our list of approved books.

Inventions and Patents. By Philip E. Edelman. Octavo, 288 pages, illustrated. Price, cloth, $1.50 net. New York: D. Van Nostrand Company.

This volume, which describes in detail the workings of the patent system, would seem to be assured of a warm welcome, for it explains to inventors, investors and manufacturers, many of whom have failed to understand how to use it, the simplicity and comprehensive value of the system as a means to avoid the expenditure of time and money on unpatentable ideas, patented valueless inventions, worthless patents and otherwise ill-chosen and unwise attempts to benefit under the patent laws. There are also important chapters on protecting an invention; points of patent procedure; disposing of patent rights; infringements; foreign patents, etc.

How to Choose and Use a Lens. Edited by F. R. Fraprie, S.M., F.R.P.S. 12 mo. 83 pp. Paper, 25 cents; cloth, 50 cents. Boston, U. S. A.: American Photo-Publishing Co.

This is No. 3 of "Practical Photography," and consists of well-known facts about lenses that have been assembled with discrimination by the editor. They have been published from time to time in authoritative text-books, lens-catalogs and the photographic press. They are intended to instruct, and explain pitfalls to be avoided by amateurs when photographing under various and difficult conditions, particularly to preserve the natural perspective and proportions of objects, animate or inanimate. A table of hyperfocal distances, from 2 to 24 inches, is a specially interesting feature of this practical little volume.

A Fable

A duck which had laid several dozen large eggs complained that she received no recognition for this achievement.

"That hen over there," she complained, "who has not laid as many and as large eggs as I have, is praised in books and poetry; whereas I am not even mentioned."

"The trouble is," explained a cockerel who had listened to her, "that you do not give publicity to what you have done. You lay an egg, and then you waddle quietly away without speaking of it. The hen, on the other hand, lays no egg without making a great noise about it, so that the whole neighborhood is informed of the event."

This fable should be remembered by those who do not advertise.—*Die Photographische Industrie.*

Identification of School-Children

Class-photographs have long been made in the public schools, and now individual portraits are coming into a new significance in large cities where children of every character and condition must be contended with. The problem is an especially complex one in New York, where it has recently been decided to photograph all school-children for identification, a course having many obvious advantages to child, parents and society.

Unfortunately, this entire matter has been placed in the hands of a Philadelphia concern willing to do the work gratis so far as the City of New York is concerned, the scheme being to sell prints to the pupils through their teachers, and thereby not only cover the expense of the work for the Department of Education, but net a handsome profit besides, even though the prices charged are very low.

Photo-Era believes that in this matter our great metropolis, which enjoys virtual commission-government, and should stand as a model for other municipalities, has taken a deplorable course. First of all, it is right and proper that the city pay for all legitimate services rendered; indeed, it should not be otherwise. If the expense seems too great, the city should assume the sale of prints to pupils, and take all profits above the cost of production. This would at least cover the expense of the photographic identification, and probably pay a profit besides, which would not prove unwelcome during the present highly indebted condition of the city. Second, the city should aim in every department to patronize home-industry whenever compatible with due economy, and in this instance it is difficult to believe that New York photographers could not compete successfully with those of any other city. Certainly, this arrangement appears to have robbed them of a considerable amount of business which is rightfully theirs. Third, it is unjust that so large an order, covering so wide a territory as is embraced by Greater New York, should fall into the hands of a single firm. New York consists of five boroughs, having an average population of over a million inhabitants each, and a spirit of fairness would indicate a school-photographer resident in each borough, all working, of course, according to uniform specifications laid down by the Department of Education.

This situation, which is likely to be duplicated elsewhere, indicates clearly that it behooves the photographers of every city to see to it that their talents and facilities are given due consideration in awarding contracts. Indeed, it is reported that the Philadelphia firm now in control of the New York work has already photographed the school-children of Boston, Fall River, Lowell, Cambridge, Hartford, Pittsburgh, Milwaukee, Easton, Pa., Trenton, N. J., and about twenty-five other cities. Let no photographer desirous to do this work in his home-city be lacking in initiative.

The Largest Telescope in the World

It is reported by the daily press that the largest telescope in the world is about to be erected in the observatory recently established by the Canadian government near Victoria, B. C. The instrument is the work of Dr. John A. Brashear, president of the American Society of Mechanical Engineers, and builder of the great forty-inch Yerkes telescope, the thirty-six-inch Lick telescope and the twenty-six-inch telescope of the United States Naval Observatory.

The Canadian telescope recently completed by Dr. Brashear has a lens six feet in diameter. Instrument and dome weigh sixty tons; the tube, thirty feet long and more than six feet in diameter, alone weighs twelve tons. The principal speculum or mirror is a disc of glass seventy-three inches in diameter, weighing over two tons. A powerful driving-clock will regulate the movements of the gigantic instrument. The total cost is estimated at approximately $300,000.

WITH THE TRADE

Verascopes and Taxiphotes

Our correspondence, numerous queries and requests for magazine-articles on the subject indicate conclusively that interest in stereoscopic photography is on the increase, particularly with miniature cameras. The fascination of the work and its economy, due to the small size, cannot be denied. Those of our readers who contemplate investing in apparatus of this sort should not fail to send to R. J. Fitzsimons, 75 Fifth Avenue, New York, for the latest catalog of Verascopes and Taxiphotes manufactured by Jules Richard, Paris. These instruments are of the best, and elicit the highest praise wherever shown. The Verascope, of course, is the stereoscopic camera; the Taxiphote, a wonderful stereoscope or viewing-device which raises the desired plate from a grooved box, places it opposite the eyepieces and then replaces it in the box again without changing its order.

The Mercury-Vapor Lamp in Aerial Telephony

The Cooper Hewitt lamp has other uses than illumination. It has had much to do with the development of aerial telephony, the latest world-wonder. A lamp is used at both ends of the wireless "circuit," on the transmitter and on the receiver. The arc acts much the same as an amplifier does to the ordinary telephone wire. The weak impulses received are intensified, so to speak, until they become even stronger than when they originated.

Imp Flashlite-Gun a Success

The simplicity, efficiency and reliability of this clever device have "caught on." The Imperial Brass Mfg. Co. advises us that the publicity being given this flash-apparatus for amateurs is bringing generous returns, and that the purchasers are meeting with the utmost success with its use. Specimen pictures are being obtained from purchasers, and reproduced on slips of coated paper, together with a testimonial from the author. Certainly this is pleasing and convincing advertising.

Deceiving the Trusting Public

With regard to the decision of the U. S. Supreme Court, after ten years of legislation and litigation, that the statute excluding from interstate commerce false statements of curative effects of drugs is constitutional, Justice Hughes says:

"We find no ground for saying that Congress may not condemn interstate transportation of swindling preparations accompanied by false and fraudulent statements as well as lottery-tickets."

Justice Hughes may have an opportunity to express a similar opinion regarding a new type of camera made and sold in this country by a firm which asserts that, in the hands of any amateur, pleasing results may be produced. As a matter of fact, this type of camera is practical *only* in the hands of its inventor, and hence dealers throughout the country do not wish to carry it. Any apparatus or specialty which the dealer cannot guarantee had better be let alone.

Letter Declining an Advertisement

Although it is not necessary, nor tactful, to publish the names of the concerns whose advertisements Photo-Era declines to accept, from time to time, it may interest many to read a specimen letter, in which the Publisher gives his reasons for such action.

Boston, Mass., Jan. 11, 1916.

Dear Sir:

We thank you for submitting to us one of the colored photographic prints according to the advertisement you desire to insert in Photo-Era. While not objecting to the form of your advertisement — offering to give *free* one 8 x 10 enlargement from a negative sent you by the customer, provided he let you color it, your price being one dollar — we are free to say that the coloring, according to your sample print, is very inferior, and, moreover, scarcely worth the price. Besides, the print was not trimmed carefully before being mounted, as the building is considerably out of plumb. If you submit a print of such a character to the publisher of a critical journal, you are very likely to be as careless, if not more so, to a customer.

For these reasons we regret to be unable to accept your advertisement. We return to you the print exactly as received by us, considerably damaged in transmission by mail, because carelessly done up.

Thanking you for submitting the print in reply to our request, we remain, Yours truly,

Photo-Era Magazine.

A Hint to Dealers

While many a photo-supply dealer racks his brains how to increase his business, he often forgets that, years ago, certain methods were practised that produced good results and are well worthy to be tried again. Of course, there are so many new attractions, nowadays — the theaters, the "movies," free lectures, etc., that the dealer must first study the character of his community before he embarks on a plan of publicity.

That the general public is interested in pictures needs no argument. Here is an opportunity that the wide-awake dealer should embrace without delay. It should be easy for him to assemble several collections of highly meritorious prints by noted amateurs, one-man shows, if he prefers, which, if properly advertised, should fill up his store during the day-time.

For an evening-entertainment, he can install a series of autochromes or Paget transparencies displayed by means of an effective system of artificial lighting. Or, a timely talk on any of the live and engrossing subjects of the day, illustrated by beautiful lantern-slides or by motion-pictures, using for the latter one of the several types designed for home-use, which he can probably obtain free from the agency on account of advertising. He will probably be able to get the assistance in these publicity-shows of amateurs eager to acquire the experience. Naturally, the dealer will forestall attempts to reduce his stock of photographic goods by illegitimate means (the light-fingered gentry), and, for the time being, conceal his sign, "Take a Kodak with you," or add the words "that you have bought."

Other similar attractions will suggest themselves to the resourceful purveyor of photographic materials.

MARCH 1916 15 Cents

PHOTO-ERA

The American Journal of Photography

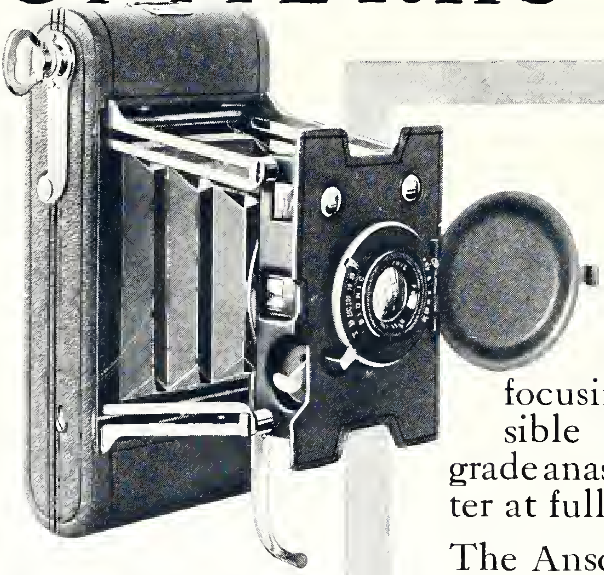
THE LIBRARY, [illegible] FROM

Many
Helpful Ideas

FOR EVERY CAMERA-USER

ANSCO

CAMERAS & FILM



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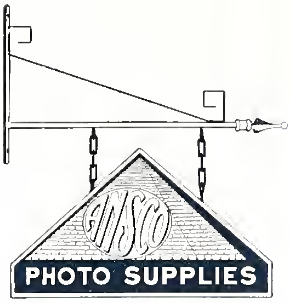

The Sign of the
Ansco Dealer

ANSCO COMPANY
Binghamton, New York

Contents, March, 1916

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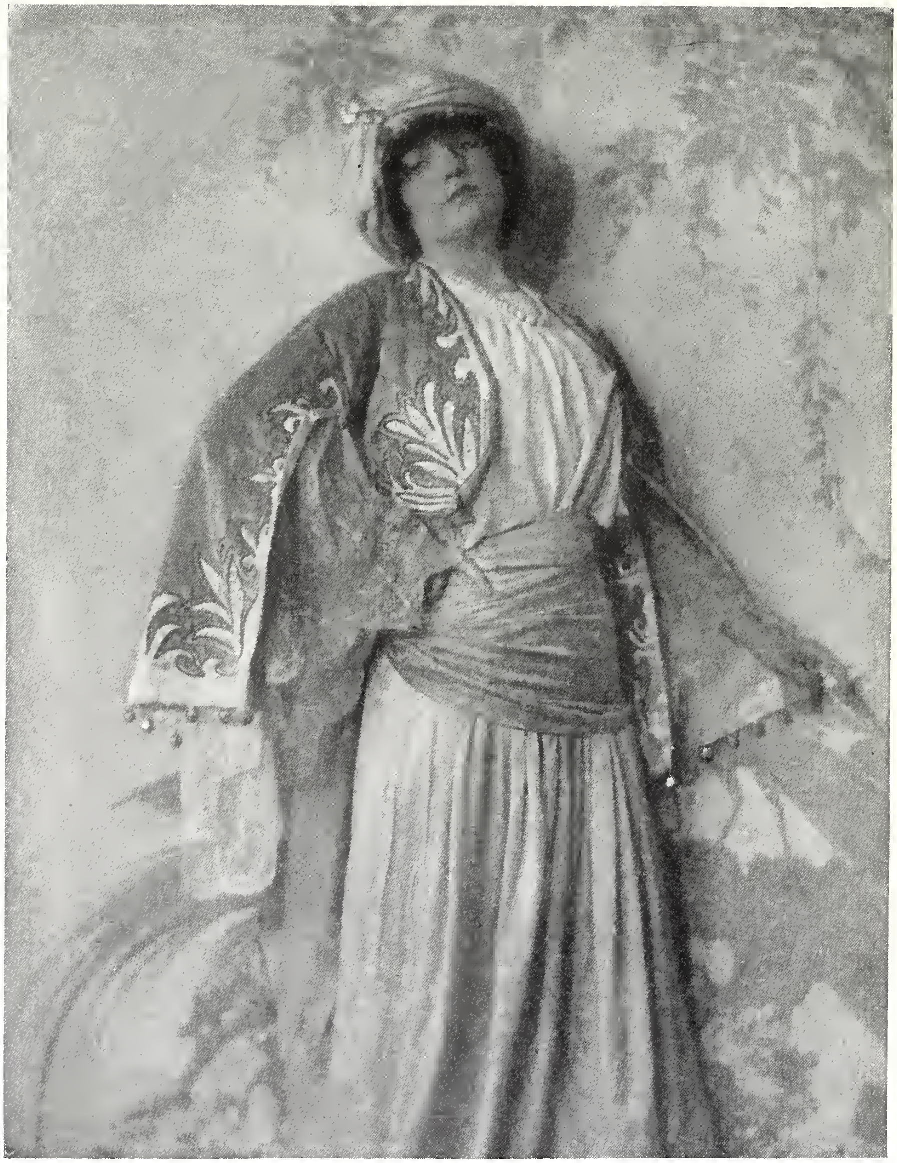


IN COSTUME
WILLIAM SHEWELL ELLIS

PHOTO-ERA

The American Journal of Photography

Vol. XXXVI MARCH, 1916 No. 3

Methods of Exhibiting Color-Photographs

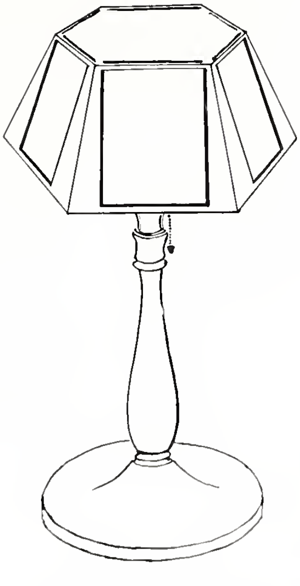
H. F. PERKINS, Ph.D.

THE chief disadvantage of the various processes of photography in natural colors is that they produce pictures on glass instead of the much more convenient prints. Thus far there is no *entirely* satisfactory method of making prints on paper in which the colors of nature are produced, so far as the writer is aware. For a time, then, it seems likely that we shall be obliged to depend upon transparencies on glass for the majority of our color-photographs. The purpose of this article is to outline some of the best ways of showing glass positives both for the sake of bringing out their best qualities and for making them visible to a number of persons at once.

A very convenient and satisfactory "Diascope" of the Lumière-Jougla Company is an excellent device for viewing one picture at a time, especially if it can be done under just the right conditions of daylight. It is remarkable how much more brilliant the autochrome picture is when displayed in the diascope than when it is viewed by transmitted light in the usual way and holding it in the hand and looking through it towards the source of light. For a number of persons it is obviously impossible to use the ordinary diascope.

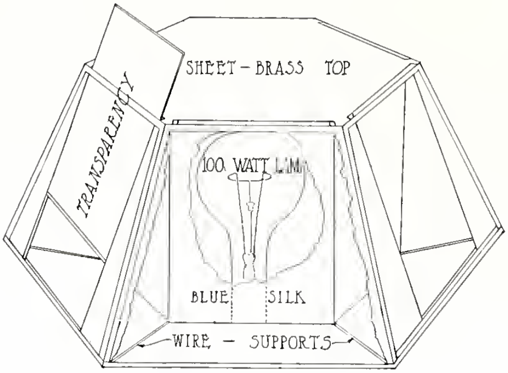
The Autochrome Lamp-Shade

The first plan that I would mention for showing several pictures at once works very well for a small group of people. It consists of an hexagonal lamp-shade which can be revolved on the shade-holder, thus showing the pictures in succession. It is made of brass with grooved openings for six pictures which can be readily interchanged. Incandescent gas furnishes the best light, and I use a small globular opal chimney around the mantle. This heats the pictures a good deal, so that it is not safe for a permanent display of a set of views. The plates have to be changed every few minutes, otherwise the film is apt to be overheated. This causes a shrinking of the film, which "creeps," spoiling the registry until no color is visible in the picture, or cracks form, which give it the appearance of having been struck by lightning. It is obvious that a very slight change in the position of the particles of blackened silver in the emulsion will bring them into a wrong relation to the substratum of colored starch-particles. A very little creeping of the film will, therefore, produce the appearance of fading, and this has given rise to the idea that autochrome plates are likely to fade in the heat of a projection-lantern. In reality the arc-light is quite incapable to alter the colors. A powerful incandescent electric lamp of 60 or 100 watts is much less troublesome and dangerous than the gaslight for the reason just mentioned.



THE LAMP AND SHADE

A lamp-shade of the sort described cannot be purchased ready-made, but can be made to order out of sheet brass by any expert tinsmith. Of course the openings should be of a size to permit changing the plates easily, and at the same time they must not be sufficiently oversized for a plate to be allowed accidentally to drop out of the frame. A frame for six vertical pictures, 5 x 7, is in the possession of the writer and is illustrated in the accompanying figure. It probably would not be practicable to build a frame for larger plates, but 4 x 5 pictures could be accommodated very nicely in a smaller frame of approximately the same proportions. The openings are $5\frac{1}{4}$ x 7, outside measure, and $4\frac{7}{8}$ x $6\frac{3}{4}$, inside measure. The grooves are thus $\frac{3}{16}$ of an inch in depth. The ring for attachment to the shade-holder of the lamp-stand is level with the bottom of the shade in order to bring the electric lamp to the proper level. Heavy brass wires connect the ring with the six angles of the frame, and from each of these horizontal braces a vertical wire runs to the top of the frame. These six vertical wires form supports for stretching a piece of light blue China silk between the pictures and the lamp. This serves the double purpose of a diffusing-screen for obtaining uniform illumination over the entire picture, and also of neutralizing some of the excess of yellow in the incandescent electric light. The effect is much more like daylight than will be imagined. A sheet-brass cover or top can be fastened onto the frame in such a way as to prevent the escape of unnecessary light without interfering with the changing of the pictures.



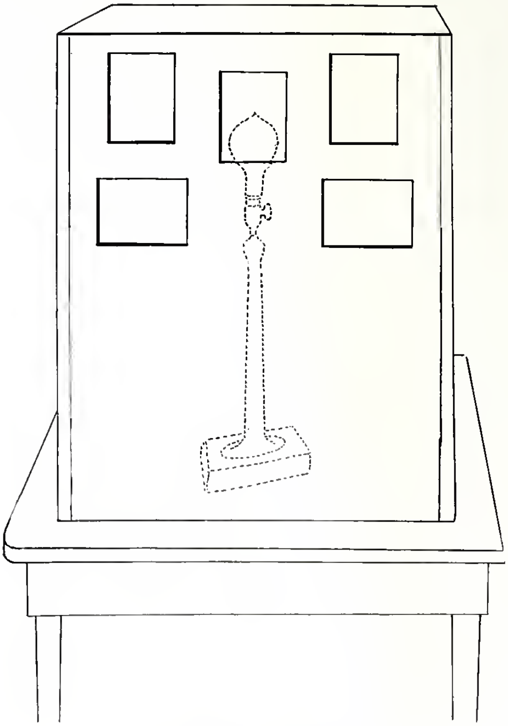
LAMP-SHADE DETAIL

Obviously, a lamp-shade of the sort described is somewhat heavy, and care should be taken that a sufficiently substantial support be provided. The shade-holder should be of the cast brass type rather than light sheet metal, and the ring at the base of the frame should be so made as to permit the lamp-shade to be revolved with as little play as possible. This is accomplished by making a rolled edge of the right thickness on the ring just to accommodate the three screws in the shade-holder.

As is seen in the drawing, there is nothing awkward or ugly about a shade of this kind. Whether a lamp is lighted or not the effect is odd and artistic, and after dark, when the pictures are illuminated, the owner of such an autochrome lamp-shade has something of which he can be justly proud.

The Exhibition-Cabinet

For purposes of exhibition on a larger scale, the following plan has been put into very successful operation. One hundred pictures were displayed at a time. Fifty to sixty persons could view them at once without getting in each other's way. In a darkened room five cabinets were arranged on as many substantial tables, with a one-hundred watt lamp in the center of each. The cabinet consisted of four large sheets of heavy double-faced corrugated strawboard, with openings in which the pictures were inserted, and a fifth piece of the same board made a roof, to exclude troublesome reflections. The four sides, each 30 x 36 inches, were held together by strips of muslin pasted over the angles. Five openings were cut in each side, the upper portion only being used for the pictures, so as to bring them all as nearly as possible to the level of the eye (see illustration). The openings are cut with great care, so as to enable one to insert the picture from the front and then fasten it in place



THE EXHIBITION-CABINET

with strong pins thrust into the corrugated board. Each opening is cut a quarter of an inch smaller all around on one side than on the other, thus forming a border at the back to keep the picture from falling out. It is found that the pictures must be put in place while the cardboard lies on the table, and then the pins inserted three on each side at right angles to the grain. This holds the picture firmly in place, and, if carefully done, there is not the slightest danger of damage to the picture.

The best way to fasten the four sides together is to paste on the strips of muslin, attaching two sides together, then to lay these two sides like an open book on a large table and place the pictures. The other part is similarly completed, and then the whole thing, after being set up on a table, is fastened firmly together by attaching the muslin to the two remaining angles. Of course, it is necessary to use a substantial table. To complete the cabinet a sheet of light blue tissue-paper is suspended from the roof, between the pictures and the lamp, about four inches from the former. This serves the double purpose of a color-rectifier, neutralizing the excess of yellow in the light, and of a diffuser, ensuring much more uniform illumination of the plates.

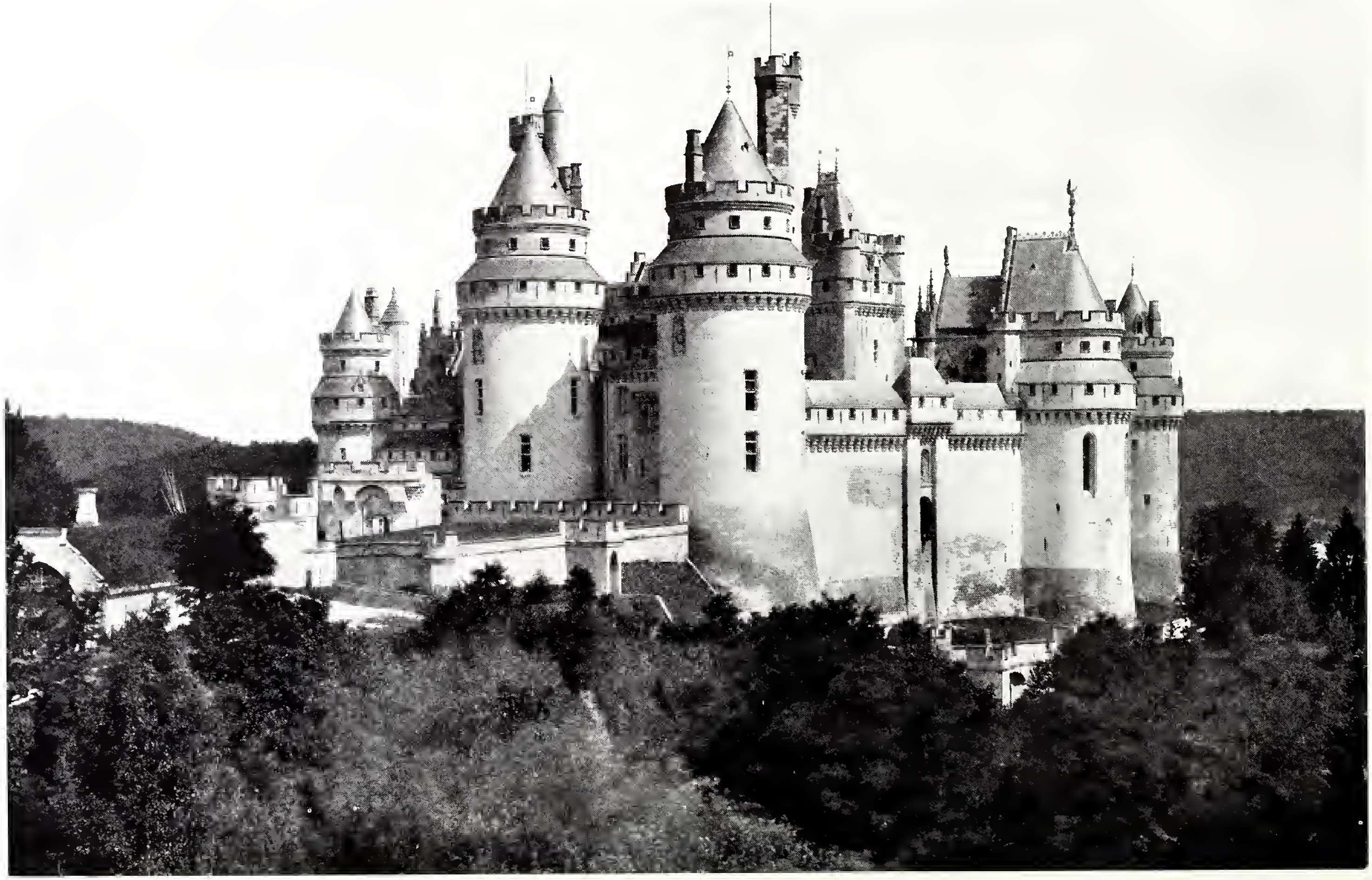
In order to get the best color-effects it is found that some pictures which have a slight excess of some one color are greatly improved by cutting away a portion of the blue tissue for some, substituting yellow or pink tissue for others or adding a second thickness of blue for a particularly thin plate, especially if it have a yellowish or pinkish cast. It is quite remarkable how much certain pictures can be improved by this treatment, and some dense plates which would scarcely seem suitable to exhibit in a general collection are, in this way, made to harmonize quite satisfactorily with the others.

Opportunity for the exercise of considerable care in the selection and grouping of the pictures is afforded by this means of display. It is worth while to experiment until the most pleasing combinations are brought together. In general it will be found that a group of pictures of different subjects is preferable to a strict separation of the different kinds. One or two portrait-studies, for example, grouped with three landscapes, furnish a pleasing variety. The same may be said of the shapes and sizes of the pictures displayed. Variety in this respect also is to be preferred to too much uniformity. It will be found that the selection of the pictures on the basis of the prevailing color will offer a good opportunity for the exercise of artistic judgment, and considerable benefit may be gained from experimenting with a view to getting the best combinations of pictures with regard to their colors, and to bringing out the best effects in certain special pictures by placing them in the most advantageous position in the group. If the electric lamp is placed directly opposite the openings for the pictures, and a large room used for the exhibition, so that persons can view the pictures from a good distance, the effect will be found remarkably pleasing. Indeed, many pictures which have not, perhaps, been regarded as altogether successful take on a new beauty and interest when shown in this manner.

Other Methods

Numerous other methods of exhibiting autochromes and other color-photographs have been used by various workers with varying success. For permanent display the Lumière Company placed on exhibition in its sales-rooms a metal wall-cabinet projecting five or six inches into the room and lighted by electricity from the back. A prominent professional photographer has used a large case containing a number of diascopes so arranged that they can be viewed by artificial light. Each diascope was permanently placed in a compartment in the case. Another plan is to arrange a number of color-photographs on glass, like the roof of a house, in two rows, with lights underneath. It was possible to show a considerable number of pictures in this position, as there were no spaces between them.

Any device for exhibition of color-photographs should be planned in such a way as to permit as nearly uniform lighting as possible, and the light should be as close to daylight as can be provided. By reason of its varying intensity daylight is much less satisfactory in the long run than a properly corrected electric light. In spite of the trouble involved in arranging any one of the methods described for the display of color-photographs, there is no question that the pictures on glass have a depth and brilliancy which are peculiar to the transparency, and for which no print could ever offer a complete substitute, no matter how perfect a method may be devised for producing prints in natural colors.



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CHÂTEAU PIERREFONDS

ARTHUR STANLEY RIGGS

A Method of Finishing Photographs

EDWARD L. AUSTEN

RECENT experiments in the fascinating mysteries of amateur photography have led me to believe that too much emphasis is placed by manufacturers and others on certain details of amateur processes and not enough emphasis on certain other details. In the hope to interest some earnest worker, I shall record some points in my method of finishing a photograph.

Of course, any one — by following intelligently the directions furnished by the manufacturers — can obtain passable results in photographing ordinary subjects. But when he attempts more difficult subjects, that possess, for instance, unusual violence of contrasts, or delicate shadows on which depend the interest of the picture, he is going to encounter difficulties at once. Let us suppose that he has attempted that bugbear of amateurs — clouds in landscape. Even if he does not lose the clouds themselves he will probably lose their delicate gradations if he makes use of his regular exposure and developer. The clouds will be faint when the foreground is correct; or if the clouds are printed to the correct depth, the foreground will be inky. He may, or may not, be able to correct this by dodging; but a negative which requires dodging cannot be called an entire success. How can he overcome these difficulties entirely?

Most photographic manuals lay great emphasis on correct exposure. The amateur is desperately afraid to overexpose, so he usually underexposes. The exposure-tables ordinarily published give too short exposures — often two or three times too short. I have read much concerning the muddy effects of overexposure; but I have never seen them yet, except in cases of very great overexposure of flat-lighted subjects. Even then I believe that internal reflections in the camera are responsible as much as anything for this result. The whole secret of controlling full exposure lies in proper developing and printing. I use a soft-working hydro-metol formula *supplied by the makers of the plate*, with just enough bromide to make the developer work clear. The developer is always diluted, to get detail, and also to give the emulsion time to become fully saturated (although I am not sure that this helps at all). Dilution certainly gives detail, principally by reducing contrast. The more contrast of light the subject possessed, the more the developer is diluted. The tyro would call such a negative flat and thin as it comes out — a failure, no doubt; but it is just what he wants. It might not be suitable for some of the advanced-amateur processes; but our amateur is concerned only with gaslight papers.

The obliging manufacturer now furnishes papers in many grades of contrast. If one uses such a paper as Azo hard-medium or hard X, the print comes out possessing, besides the perfect detail of the negative, the only point the negative lacked — contrast. And the print did not require dodging — a valuable point where duplicates are being made, or when the horizon-line of the picture is not bare, but cut up with trees or buildings.

In fine, I would advise every amateur to paste on his camera, in large and legible letters, "Expose for the deepest shadows;" and to hang a sign in his darkroom, "Develop for detail."

Airship-Photography in the War

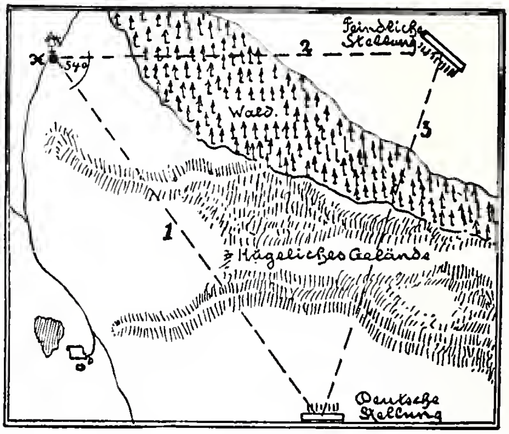
ALEXANDER BÜTTNER

THE really invaluable service that photography has rendered since the beginning of the war can be fully understood only after we have the complete accounts of its manifold employments in this gigantic struggle. Besides the valuable fact that photography gives us a true reproduction of what our army and our sea- and air-fleets are doing, and thus in a convincing way branding as lies the false news and invented reports of our enemies, it furnishes an excellent means of explanation, without which a large part of our successes could not be understood. It is by the sole help of airship-photography that we are able to determine exactly the location of the enemy's positions, batteries, forts, etc., and then to destroy them.

In the present war — perhaps for the first time — we find balloon-photography employed with really great success. A few years ago this was considered one of the most difficult branches of the photographic art, although a beginning was made considerably more than forty years ago, when, shortly after the invention of the light-sensitive wetplate, Daguerre made the first balloon-pictures. The first really useful employment of air-pictures was achieved by Napoleon III, in 1859, during the battle of Solferino, when he had the Austrian position photographed. But all pictures, whose number naturally increased from year to year, required a long exposure, owing to the limited sensitiveness of the plates. Consequently only views lacking in sharpness were obtainable. It was not until the year 1880, some time after the invention of the dryplate, that instantaneous views were taken from a balloon in $\frac{1}{20}$ second, and perfectly sharp pictures were obtained. In Germany, some four years later, Tschudi and Hagen taught us the strategical value of balloon-photography, and since the nineties air-photography has gained many adherents in Germany. But only a limited number of those interested in photography made experiments in this line, and most of those who did soon discontinued their activities. Even during the last twenty years balloon-photography, the practice of which has shown itself to be without special difficulty, has been comparatively seldom employed, although during this time aeronautical technique and practice have attained undreamed-of expansion. The reason for this cannot be attributed to the uncertainty of the air-craft, but must rather be sought in the fact that up to three or four years ago a really adequate balloon-camera had not been constructed. In the year 1910, however, the three best-known camera-makers in Germany, viz., Goerz, Nettel and "Ica," almost simultaneously placed on the market cameras specially constructed for balloon-work. Owing to their high cost, however, very few of these equipments were sold; besides, their manipulation was always somewhat difficult. In the following years many improvements in construction, based on the recommendations of balloonists and technicians, were made, which greatly facilitated the use of the apparatus; and a little more than a year before the outbreak of the war one of the above-named firms perfected a camera whose manipulation is remarkably simple, and whose precision and mechanical completeness are unapproachable. This balloon-camera was soon bought by the military authorities, and was extensively used in nearly all the flying-competitions. It was almost always the case that, simultaneously with the airship-competitions, there were also prizes for the best photographs taken in the air.

As it is not permitted to give minute details of the construction of these cameras, which are now used in the war, I must confine myself to a general description. The apparatus proper resembles in form and size a 13 x 18 cm. mirror reflex camera, and has a curtain-shutter of the highest speed ($\frac{1}{3000}$ second). For a handle it has a grip which has a small movable lever on its under side. By pressing on this, like the trigger of a pistol, the shutter is released. The mirror, which is well protected from the light, permits an extended observation of the object, even during exposure. Changing the plate is effected automatically by a second pressure on the lever. It will, therefore, be seen from these few particulars that there are not nearly so many difficulties in using the apparatus as was formerly the case; and this is a prime consideration, for very often there are but a few instants in which to make the exposure from the rapidly moving airship. The officer in charge of the photographing, in all circumstances, and as soon as the enemy's position is discovered, must try to fix its location on the plate by including some prominent object visible from a distance, such as a church-tower, farmhouse, windmill, hill, high tree, railroad-line, etc., which can also be seen from the German battery. If he succeeds in getting such a picture, which is generally repeated two or three times, with these data there is but little difficulty to locate the enemy's battery to within a few meters.

After taking the view the airship returns at once to its station. The negative is there developed, fixed and dried, and a bromide print made, which can be delivered wet to the artillery-officer in command. The print quite closely resembles a map. Trenches are shown by light lines, the gun-positions by light points over one another. Then an exact computation is made of



Feindliche Stellung, enemy-position; *Deutsche Stellung,* German position; *Wald,* forest; *Hügeliches Gelände,* hilly country.

THE NEVADA ON HER TRIAL-TRIP G. W. LORD

The Nitrogen-Mazda Lamps

E. J. WALL, F.R.P.S.

THE introduction of the high-power Mazda lamps has placed a new tool in the hands of the photographer; they are useful not only for portraiture at home or elsewhere, but for copying and general studio-work.

Special fixtures with daylight-screens have been placed on the market; but from a theoretical and practical point of view these are a mistake. The most important feature of the new lamps is the extreme richness of their light in green, orange and red rays when compared with the ordinary carbon-filament lamp. The daylight screens are made of blue glass, which cuts down these very colors so that the light is comparable to daylight. From the point of view of matching colors, or for the mere illumination of stores, this may be an advantage, but from the photographic point of view it is a real detriment.

For years the tendency has been towards an increasing use of color-sensitive plates, with the natural result of a much better rendering of skin-texture and a consequent reduction of retouching. The introduction of fast portrait-panchromatic plates has placed yet another power in the hands of the photographer; but which can be fully utilized only if the nitrogen lamps be used.

Every one knows that to obtain correct color-rendering with panchromatic plates a color- or ray-filter is required, which with daylight increases the exposure about four times. When using the Mazda lamps no filter is required to obtain markedly improved rendering.

One of the great advantages of the lamps is their portability. They can be shifted about, and effects can be obtained that are almost impossible with daylight, and absolutely even lighting can be obtained in copying.

The only disadvantages of these lamps are the heat and the glare. The former, however, is actually of no moment in any studio of reasonable size, and the glare can easily be reduced by

CUSTOMHOUSE TOWER, BOSTON GEORGE R. KING

diffusing-screens. Naturally, such screens reduce slightly the intensity of the light; but if white scrim or muslin be used the reduction is negligible.

A suitable ray-filter for use with these lamps for panchromatic plates is a weak yellow one, preferably prepared with filter-yellow (Hoechst Dye-Works) and containing 0.5 grams per square meter, which is approximately one-twelfth of a grain for a 3 x 3-inch plate. It is possible to stain the diffusing-screen in front of the lamp; but for all-around work the filter in front of the lens is to be preferred, especially if the copying of pictures is to be done, when a much deeper colored filter is required. The quantity of dye must then be increased six times for the same area. This is practically what is known as a correct-luminosity filter, and with daylight increases the exposure about four times; but with these lamps the increase is only twice, a natural corollary of the richness in the less refrangible rays.

The smaller sizes of these lamps, such as the 250 c.p., will be useful for enlarging; but some means must be taken to lead off the heat. I have always used a 40-watt lamp in a silvered parabolic reflector, and replaced this by a 250 c.p. nitrogen lamp. My first attempt was with a 4 x 5 negative, and in less than five minutes the center of the negative was badly scorched and the glass cracked.

Hitherto for photomicrography I have always used a hand-fed arc, which has the happy knack of going out in the middle of a long exposure if not carefully watched. The replacement of the arc by one of the small Mazdas was not a success, as the increase of exposure was so great,

CALIFORNIA MOUNTAINS WRIGHT M. PIERCE

and the extended size of the light and its consequent troubles has prevented so far its permanent adoption. Increase of exposure is a very serious matter when using oil-immersion objectives and color-screens, as half-an-hour's exposure is not unusual with the arc.

I believe that the studio of the future will employ Mazda lamps and panchromatic plates entirely. The photographer will become quite independent of daylight, and, therefore, will be able to locate just where he likes, and not be relegated to the top floor of a high building. It may be that at first some little trouble will be met with generally in adjusting oneself to the new conditions; but after all the only thing to learn is how to use panchromatic plates. These are as easy to work as ordinary plates if it is once recognized that a green light must be used — and it must be a deep green, too. The chief trouble with the average operator is that he wants to see the image on the plate, so that he can stop development just when he thinks the negative is right. If every one would recognize that looking at a plate has absolutely no effect on it, and that all that the darkroom-operator wants to know is just the right kind of negative that will give just the kind of print that is required, then, by merely adhering to one fixed developer and temperature and time of development, the negatives will be always alike.

There is more rubbish written about development and control than on any other subject. The exposure has fixed once for all the ratio of the densities of your negative, and all that the most expert operator can do is to arrange the time of development so that the negative is suitable for the particular printing-process employed.

The American Annual of Photography.

IN THE GHETTO HARRY COUTANT

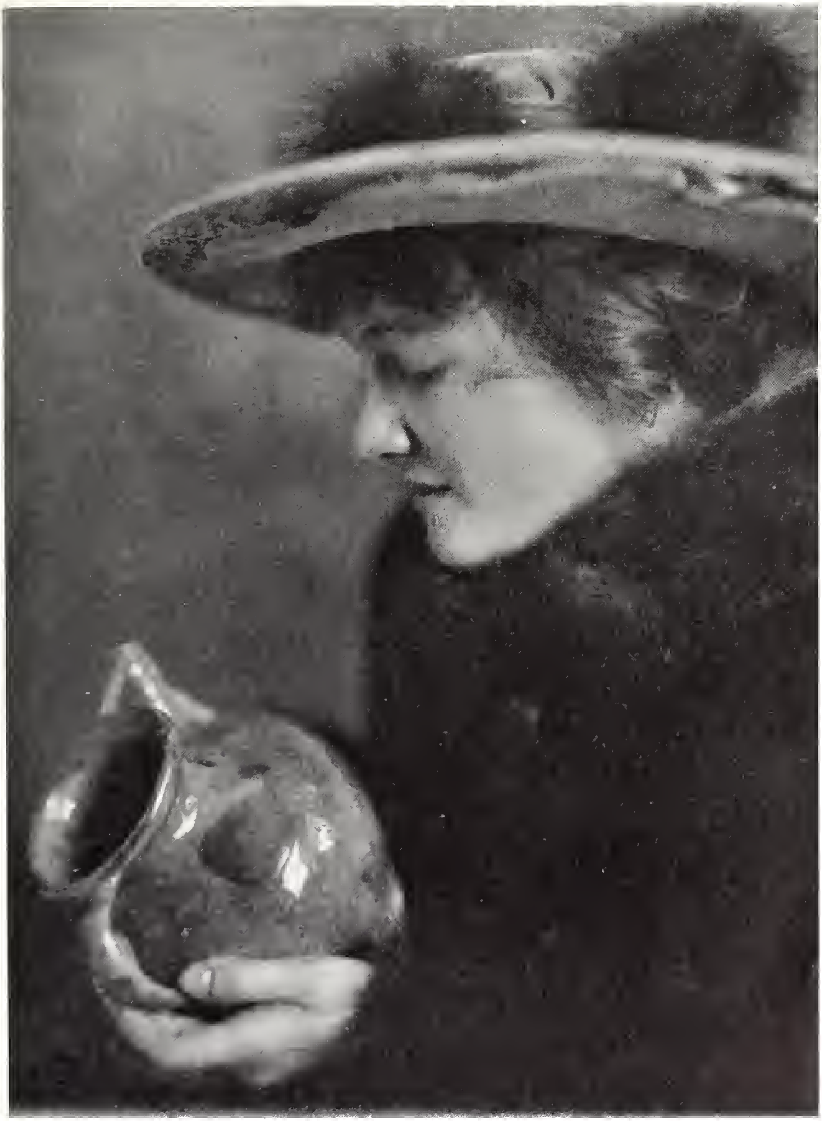
Price-Cutting on Standard Photographic Products

A. H. BEARDSLEY

IT is of immediate and vital importance that the photographic manufacturers, dealers and professional photographers take a determined stand on the subject of price-cutting. We are all in the photographic business to make money. Let us cast aside all sentiment and theory regarding the cutting of prices on standard photographic goods produced by reputable firms and individuals. Does price-cutting pay? Does it help to boom the photographic industry of the country? Does it inspire confidence and coöperation in the photographic circles of every town and city? If so, let us all cut prices and get rich quickly. On the other hand, does price-cutting honestly pay in the long run? Does it not rather tend to cause industrial stagnation? Does it not have a tendency to cause ill will and bickering throughout the entire photographic field? If so, let us stop now and consider the advisability of continuing a practice which is doing more harm than good in many quarters. Condemnation and criticism, of themselves, work no miracles of improvement. Common sense and thorough constructive criticism are needed to meet the issue.

We are all in business to make money. To make money, we must realize a profit on that which we do or sell. To cut down this profit necessitates increased business to make good the deficiency. Can the average manufacturer, dealer and professional photographer increase his business enough to make price-cutting pay?

Here and there we find a firm which cuts prices to advantage without undue damage to its profits. The reason for this is that the firm is consistent about it. *It cuts prices on everything.* The re-



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THE CONNOISSEUR
GERTRUDE MAN

sulting increase of business takes care of the difference. It may be good business if you *know* you can do it; but how many firms can do it and make ends meet? Profits in the photographic industry are none too large at best. By the time all overhead expenses are paid the average proprietor of a photographic establishment defers the purchase of a limousine still another year.

Competition in the photographic industry we need, and plenty of it, when it is on the level. Price-cutting aimed to snatch another man's business away from him may fill your coffers with gold, but what man who is "on the square" is proud of it? If you gain another man's business because you give better service, sell fresher goods and win out by playing fair, you are entitled to every cent you make. This is competition on the level. On this basis your competitor has the same chance you have, and wins or loses because of his own brains or lack of them. In price-cutting competition, things are radically different. You may be better able to cut prices than your competitor. If your competitor follows your lead he knows it will seal his doom. He loses in either case. The moment the photographic business of this country is conducted on an every-man-for-himself basis we shall all be losers. Why? Because if we do not support the photographic industry it will not support us. Conditions will steadily grow worse until no wide-awake man of business will consider putting his time and money into the industry as a safe investment. We are all selfish. That is but natural. However, our very selfishness should convince us of the great advantage obtained by sticking together to build up the entire photographic industry, so that every one of us will get more out of it in dollars and cents.

For the very reasons above referred to the manufacturer condemns price-cutting among retailers. Personally, the manufacturer loses comparatively nothing financially. He gets his price; he "should worry" whether the retailer does or not. However, he knows from experience the ill will which price-cutting invariably arouses among the retailers. By a recent Supreme Court decision no manufacturer may dictate the price at which his goods are to be sold. The unlawful restriction of the retail selling-price by a manufacturer is to be condemned if it really injures the industry. Every retailer needs the full profit on every photographic article in order to make money. His own selfishness and common sense should convince him of the advisability to maintain standard prices. This view of the matter, when approved and upheld by every retailer, will give each man an equal chance with his competitor.

As things stand to-day, the manufacturer may advertise an article at a given price and request the public to purchase it through a dealer at that price. The dealer has the privilege to lose part or most of his profit by granting the customer a discount in order to get the business away from a competitor. The competitor in turn, if given an opportunity, will grant a greater discount. If the customer is wise, he will "shop" around among all the dealers until he finds one who virtually sells the goods at cost. We cannot blame the customer for trying to get the lowest price. We would do the same thing ourselves if we knew prices varied at different stores. If each dealer quoted the same price the customer would make his purchase where he received the best attention and service. This is precisely the way it should be, and definite concerted action by all branches of the photographic industry can bring it about.

Who is to blame for the present unprofitable sale of dryplates? Ourselves. It all started easily enough. Some dealer cut a few cents to get a customer away from his competitor. Other customers heard of it and refused to pay other dealers the full price. In self-defense another dealer cut a few cents. Then another increased the cut still more to get the business away from the second dealer. To-day none of them makes a decent profit on plates; but the customers are seeking a still lower price and will continue to do so until they get plates for nothing. It is human nature to demand more just as long as there is a possibility to get more. We have only ourselves to thank for the situation.

When a dealer's prices fluctuate, he creates an impression of instability, unreliability and doubt in the mind of a conservative customer. Here is a case in point. There was a certain prominent physician who called at a leading photographic store to inspect an equipment listing well over two hundred dollars. After much deliberation the physician decided to think the proposition over at his leisure. As he turned to leave the store the dealer asked the physician for his name and address. When the dealer heard it he hastened to inform the physician that all members of the medical profession were entitled to a discount of ten percent. The physician was astonished. However, the bait failed to catch this particular fish. A few days later the physician entered another store and asked to be shown the same outfit he had seen at the first store. When he asked the price the second dealer quoted him the full list-price as advertised. The physician then related his experience with the first dealer. The second dealer politely informed the physician that he had one price to all and that price was the standard, advertised price. The physician was impressed by the direct reply. There was no beating this dealer to a lower price. A few minutes later the second dealer received the physician's cheque for the full amount. Moreover, the physician stated frankly that the first dealer's price concession aroused a feeling of doubt in his mind regarding the condition of the outfit. As a matter of fact, both outfits were new and in perfect condition. The first dealer lost a big sale by offering a price which he thought would secure him the business. Consistent price-cutting on *all* goods in the store does not have the tendency to awaken distrust in the mind of the purchaser. An unexpected inducement, such as above mentioned, will always arouse doubt in the mind of the *worth-while* patron. Remember, to prosper we must make money. From a purely selfish basis, does price-cutting pay?

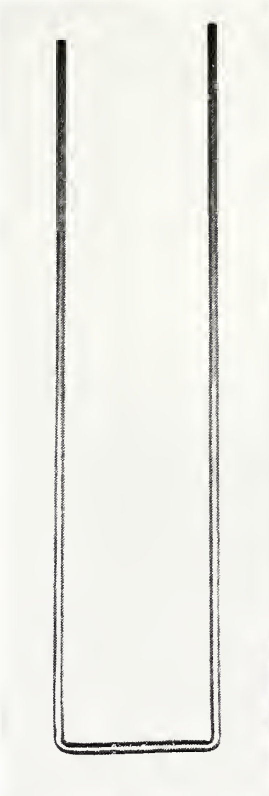
The great so-called trusts in many of our important industries are widely condemned. And why are they so strong and hard to control? The simple answer is, because they are an organized force working in *unity* toward one end; namely, to eliminate competition and thereby to make more money for those directly concerned. If unity succeeds with such an incentive, it is doubly sure to succeed when it is working *for the good of all.* The great trouble at this moment in the photographic industry of the country is distrust, backbiting and lack of unity among manufacturers, dealers and professional photographers. This has led to price-cutting and other methods of "getting back" at competitors who have actually or supposedly injured our own business. Not until this state of affairs is positively stopped shall we all breathe easier and make money. There must and should be competition; but in the name of common sense let it be fair and on the level. This gives us all a fighting chance, and to this we have every moral and legal right.

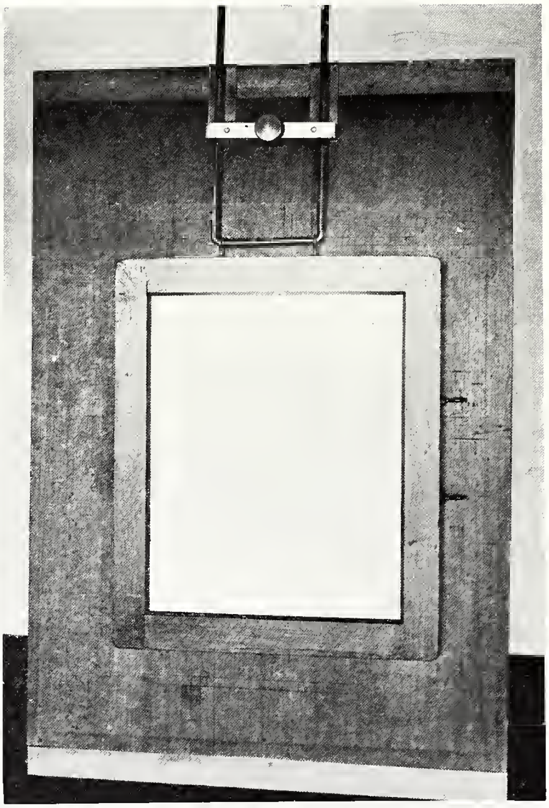
We have many associations in the photographic industry. They were designed to unify and make disgruntled members cease their "petty quarrels" and build for the common good. These associations are the milestones of photographic progress in this country, and all honor should be given them and to those in the associations who are laboring to make the entire photographic industry something of which we can all be proud. As one man, the associations condemn price-cutting. Their motive is, and can be nothing else than, the sincere desire to give every man his chance. Not until the thirteen original states of this great country "got together" did they overthrow the conditions which had become intolerable. Not until every manufacturer, dealer and professional photographer "buries the hatchet" shall we all get the reward of honest, well-directed effort. Let us for purely selfish reasons "get together" and develop the business to a healthy paying basis wherein the best man wins. Then he who loses has but himself to blame. An endless task, you say? The time and effort required rest with every member of the great photographic industry. If we join together, we win; if we do not, we lose. That is all there is to it.

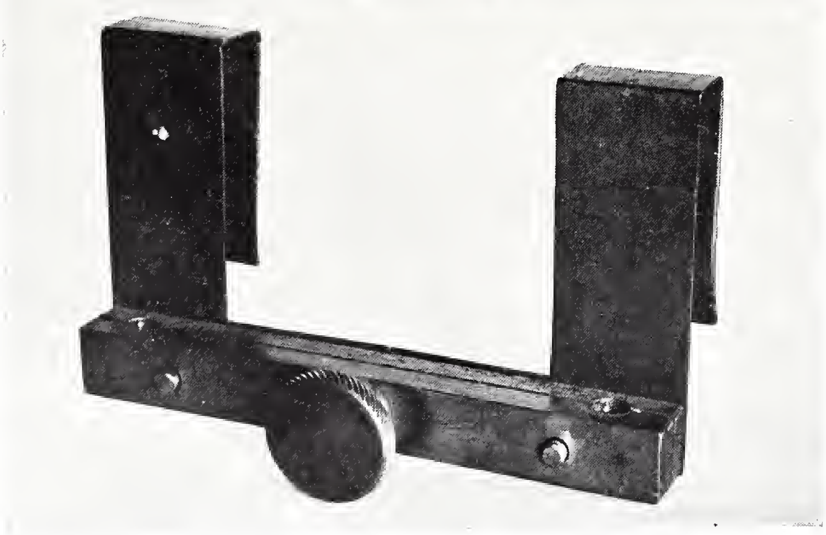
Now is the time for those who believe in price-cutting to come forward and give their reasons. If their arguments can prove to us the superior money-making possibilities of price-cutting over maintaining standard prices, then we are all very eager to fall into line, because we certainly need the money.

This article has been written with a sincere desire to make things better for us all. We must get down to methods which are known to be sound and which will bring results. There is positively no sentiment involved one way or the other. The writer believes that every person engaged in the photographic industry of this country would like to know now whether price-cutting is to continue or not. Let us become selfish about our own interests. We must decide for ourselves whether price-cutting is putting more dollars into our pockets. If it does, let us frankly admit it, and by so doing give the rest a chance to cut prices and make money — if they can. If it does not, then for our own selfish reasons let us stop it, stick together and make the photographic industry the best investment in the world.

ALL THINGS BECOME NOBLE OR IGNOBLE IN PROPORTION TO THE AMOUNT OF ENERGY OF THE MIND OF MAN WHICH HAS VISIBLY BEEN EMPLOYED UPON THEM. — *Ruskin.*







A HOME-MADE ENLARGING-EASEL
FIG. 1 AND FIG. 3
FIG. 2
LEHMAN WENDELL

PALLANZA, LAKE MAJOR — WILFRED A. FRENCH

A Home-Made Enlarging-Easel

LEHMAN WENDELL

VERY few of the enlarging-cameras on the market are provided with easels, and the purchaser is therefore obliged to improvise some sort of contrivance to which he can attach his bromide paper. The usual mode of procedure in such a case is to focus on a light-colored wall, after which the paper is pinned to it and the exposure made. This way of going at it will, to be sure, serve the purpose after a fashion — providing the photographer has an abundance of time at his disposal, and providing he is satisfied with straight printing only. But for the man who is anxious to do fancy printing, and that without too great a loss of time, the above method is crude and unsatisfactory. As for myself. I have used a home-made easel for a number of years, and I find it so satisfactory that I want to share the idea with the readers of PHOTO-ERA.

The apparatus consists of a drawing-board, an 8 x 10 printing-frame and a metal holder from which the frame hangs. The advantages of such an apparatus are as follows: An ordinary printing-frame may be employed, and this can be loaded from behind, as in ordinary contact-printing; when the frame has once been adjusted any number of duplicate prints can be made, and with the certainty that the frame will always register perfectly, so that each print will be an exact duplicate of the one preceding; double-printing, such as the printing-in of clouds, fancy borders, etc., can be done as accurately and quickly as in contact-printing; last, but not least, the method is about as rapid as contact-printing.

It is hardly necessary to describe in detail the construction of the apparatus, as the illustrations speak for themselves.

Fig. 1. This is made of ¼-inch soft brass rodding, and is bent as shown in the illustration. When finished it measures 3½ x 15 inches. The corners should be as sharp as possible, so as to make the frame hang firmly.

Fig. 2. The horizontal portion is made of soft iron, each half measuring 4 x ½ x ¼ inches. Holes are next drilled in these, as shown in the illustration. The two upper holes are for the U-shaped part, and they must therefore be slightly smaller than the brass rodding. The holes on the side are provided with short rods, the idea being to ensure the two parts from moving in but one direction. These short rods are affixed to the inner bar, and the holes in the outer bar are a shade larger than the rods. A thumb-screw is added, so that the two bars can be clamped together. The two upright pieces are made of spring-brass, bent to fit the drawing-board. They are riveted to the inner bar. The making of the thumb-screw had better be entrusted to a machinist or blacksmith, but all the rest can readily be made at home with an ordinary kit of tools.

Fig. 3 shows the apparatus set up ready for use. I have said nothing about a track on which the drawing-board can be racked back and forth, but the making of this is so simple that it is unnecessary to describe it here.

The Fixing-Bath Up to Date

E. J. WALL, F. R. P. S.

It is probably well known that the action of our old familiar friend "Hypo" is to remove the still-sensitive silver salts that have not been reduced by the developer after the action of light, and the chemical action may be represented by the following equation:

$$2AgBr + Na_2S_2O_3 = Ag_2S_2O_3 + 2NaBr$$

That is to say, we have silver hyposulphite and sodium bromide formed; the former is almost insoluble in water, but readily soluble in an excess of hypo, and it has been proved by Lumière and Seyewetz that a double salt

$$Ag_2S_2O_3 \cdot 2Na_2S_2O_3 \cdot 2H_2O$$

is formed. It is obvious from this that there must be a considerable excess of hypo in the bath, otherwise it will not fix properly. It may clear the film, but as it will have formed transparent silver hyposulphite, which is insoluble in water, this will remain disseminated throughout the film and cause subsequent trouble, most probably in the form of general or local fading as it is slowly decomposed by the action of the air and moisture. For we have to recognize one fact, and that is that gelatine is never chemically dry, but always contains some absorbed water.

It is hardly worth while entering into the calculations to prove exactly how much hypo should be used for a given number of plates, for we none of us know exactly how much silver bromide the plates we use contain per unit-area — and if we did know this, we should have then to find out exactly how pure our hypo is.

Of course we all know that the chemical formula for hypo, which, by the by, is always called sodium thiosulphate by chemists, is

$$Na_2S_2O_3 + 5H_2O$$

Now if we take the molecular weights of the above and write them opposite the symbols we find:

$$\left.\begin{array}{l}\left.\begin{array}{lll} Na_2 & = 23 \times 2 & = 46 \\ S_2 & = 32 \times 2 & = 64 \\ O_3 & = 16 \times 3 & = 48 \end{array}\right\} = 158 \\ \left.\begin{array}{lll} H_{10} & = 1 \times 10 & = 10 \\ O_5 & = 16 \times 5 & = 80 \end{array}\right\} = 90 \end{array}\right\} = 248$$

Now it is clear that in every 248 parts of hypo we have 90 parts of water, the so-called water of crystallization, which has absolutely no value in fixing. Therefore it is a mere matter of arithmetic to find out that 36-percent of all the hypo we use is useless water.

I have now given sufficient data to any one mathematically and economically inclined to enable him — after he has analyzed his plates or films — to calculate easily and exactly how much hypo he must use to fix an unexposed and undeveloped plate. Of course, if the plate has been exposed and developed, then the theorist ought to calculate the quantity of silver bromide reduced to the metallic state in the form of the image and make a recalculation. But, after all, is the game worth more than the money saved in calculating the necessary data?

However, Lumière and Seyewetz have saved us even this trouble, and they have come to the conclusion that not more than one hundred 9 x 12 cm. plates should be fixed in a litre of 15-percent plain hypo-bath. Now this works out so that 1,670 square inches of plate-area require approximately one-third of a pound of hypo to be properly fixed.

But we have hitherto considered plain fixing-baths. At the present time almost every manufacturer recommends an acid or an alum fixing-bath, and we ought to consider these a little more closely.

In the first place, it is as well to try and trace their origin. Exactly who was the first culprit to suggest them I have not yet found out. Eder claims to have mentioned the addition of citric and tartaric acids to the fixing-bath in 1885, for the purpose of preventing the yellow coloration of the gelatine of plates, which had been developed with pyro.

The alum fixing-bath was first suggested by Ferronay, in 1883, for plates which had a tendency to frill. At that time plates did nothing else but frill. I have yet to meet an American plate or film which, even in the hottest period of the year, will show the slightest sign of frilling, and my water-supply runs up easily in the summer to 75° F.

I have been informed that occasionally small plates that are cut from larger ones show signs of frilling in hot weather, but I cannot confirm this. I do not think that this should necessitate the use of alum, as the sulphite lye, suggested below, has sufficient hardening-action to prevent it. Manufacturers, with all due respect, have merely followed fashion, and we see, therefore, all sorts of complex formulas, calling for acids and alums, etc., in the fixing-bath.

It has been advanced also that the addition of an acid or an alum to the fixing-bath prevents the deposition of the colored oxidation-products of the developing-agent in the film and on the developed image. As a matter of fact, I think that present-day practice is founded on development with plain pyro, which is very easily oxidized, and the oxidation-product of which is precipitated *in situ* with the silver image to such an extent that if a plain solution — that is, one without sulphite — be used for development, it is possible to dissolve out the whole of the silver and yet leave an image in oxidized pyro so strong that it will give a good print.

But we do not at the present time use plain pyro as a developer, nor do our plates and films frill. Why, then, should we use an acid or alum fixing-bath? And some of the newer developers, such as metol and hydroquinone, do not deposit highly colored oxidation-products, the tendency being toward blue-black.

When we have to deal with papers — prints — we have a totally different state of affairs. We have here a support, not indifferent like glass, but absorbent of every solution that we use, and which is primarily — if one may say so — eager to pick up dirt or stain. When using papers, I think an acid fixing-bath is advisable. But, if I find that a paper requires an alum fixing-bath, then I do not use it, because I think that the manufacturer does not know how to coat a paper so that it will not blister. There are plenty of papers on the market which work excellently with plain or acid fixing-baths.

But assuming that it is necessary to use these baths, the point is, which is the best? Chapman Jones denies that it is necessary to use an acid-bath to prevent stain, as the oxidation-product of pyro is insoluble in acids, but soluble in alkalies, and therefore an alkaline fixing-bath is preferable.

But if we do not use pyro, but rather one of the newer developers, which do not deposit an oxidation-product, is there any necessity to use an acid fixing-bath?

Possibly yes — if we want to stop the developing-action instantaneously, which can be done by neutralization of the alkali of the developer by an acid, for the use of an alkaline fixing-bath with papers might carry development on just a trifle further than we require. As a matter of fact, the acid fixing-bath is for papers a saving of the acid short-stop bath — intermediate between development and fixing. And for this reason only is it justifiable.

It is impossible to examine every formula; we may therefore divide them into two classes — plain acid fixing-baths and alum fixing-baths. From a purely chemical point of view the two classes are one fundamentally.

Every one knows, or should know, that on the addition of an acid to hypo-solution it turns milky, begins to smell atrociously and finally a deposit of sulphur appears at the bottom of the vessel. The chemical reactions that occur are somewhat complicated at first sight and yet extremely simple when followed logically. It is quite immaterial what acid we use; but because it saves a little typesetting and one of the reaction-products is a very common chemical — salt — we will use hydrochloric acid, HCl.

We can then represent the chemical reactions as follows:

(1) $2Na_2S_2O_3 + HCl = 2NaCl + 2NaHS_2O_3$

The acid hyposulphite formed is decomposed thus:

(2) $2NaHS_2O_3 = Na_2SO_4 + H_2S + SO_2 + S$

The sodium sulphite is, of course, useless as a fixer, and the sulphuretted hydrogen and sulphurous acid which, of course, combines with water, will decompose more hyposulphite:

(3) $Na_2S_2O_3 + H_2SO_3 = 2NaHSO_3 + S$

The sulphurous anhydride and sulphuretted hydrogen unite to form pentathionic acid, a very unstable acid:

(4) $5SO_2 + 5H_2S = H_2S_5O_6 + 4H_2O + 5S$

and as these changes are continually occurring in the presence of an excess of hypo, it is but a mere matter of time when the whole of the hypo will be decomposed and a very large quantity of sulphur be precipitated. Practically the same reactions occur when alum is added to hypo-solution, and it is not necessary to introduce the equations.

It is obvious from equation (3) that acid sodium sulphite is formed, and if we add normal sodium sulphite this helps to sustain the reverse action and thus delays the precipitation of the sulphur. It would seem reasonable, therefore, to use acid sodium sulphite with excess of sulphite as a means of acidifying our bath. Such a solution is commercially obtainable under the name of sodium bisulphite solution, or lye, as it is much used in the dyeing-industry and it is cheap, about fifteen cents per pound. It can be made as follows:

Sodium sulphite, anhydrous	250 g.
Water to	1,000 ccs.

dissolve and add

Hydrochloric acid strong	60 ccs.

or

Sulphuric acid strong	25 ccs.

The acid should be added slowly with constant stirring.

The chemical reaction that occurs is:

$$Na_2SO_3 + HCl = NaHSO_3 + NaCl$$

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AFTER THE BLIZZARD A. H. BARNES

The acid sulphite is decomposed, giving sulphurous anhydride, which one can readily smell:

$$2NaHSO_3 = Na_2SO_3 + H_2O + SO_2$$

therefore such a solution tends to re-form sulphite.

From the above equations any one with very little chemical knowledge can calculate what ought to be the formula for an acid fixing-bath; but if we take 150 ccs. (54 ounces) of the above solution, or the commercial bisulphite lye, and add to a litre (35 ounces) of 1 to 4 hypo-solution, we shall have a good acid fixing-bath that will not deposit sulphur and yet will stop development instantly.

Naturally the more plates or prints we insert in the bath the more alkali we introduce and the acid is gradually neutralized, and finally the bath does not act as a stop for development. For those who want to find out when the bath has become alkaline, there is a very simple test, though I doubt whether it is worth adopting in practice. Make a 10-percent solution of phenolphthalein in alcohol and put some of the suspected bath into a graduate, and in white light let one or two drops of the alcoholic solution fall into it and stir. If alkaline, a rich rose-red color is at once produced.

We now come to the question of the alum fixing-bath. As I have already stated, I have never found the need of this, and it has yet to be proved to my satisfaction that it is necessary.

It is utterly impossible to pass in review all formulas; but I would recall one established fact, and that is, that of all the alums ordinary alum has the least hardening-effect, and further, alkaline alum-baths exert a greater hardening-effect than acid alum-baths.

EVENING-SHADOWS FORMAN HANNA

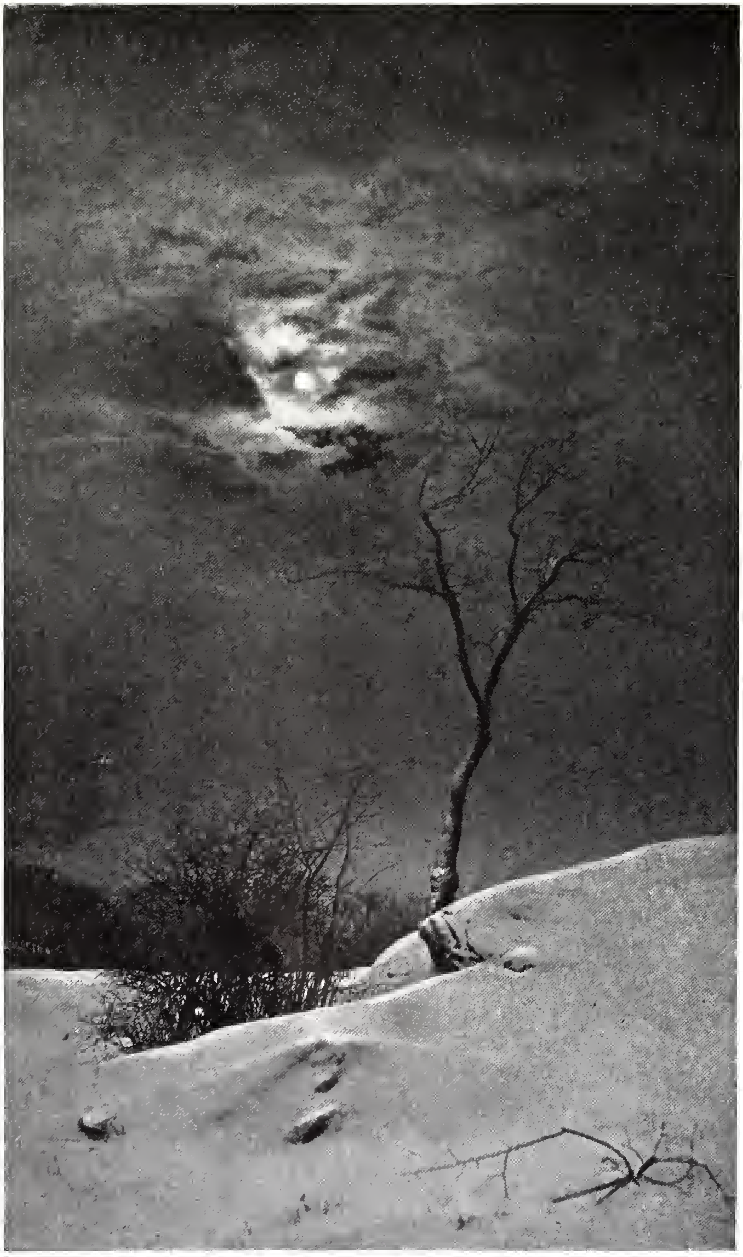
It is clear that most formulas for acid-alum fixing-baths are based on empiric methods. An acid fixing-bath should be without alum, and an alum fixing-bath alkaline. But custom has decried that the two must be combined. If this be granted, then we must search for the best formula.

Chrome alum — which contains no aluminum — is the best hardener of all the alums. It is not so efficient as some of the pure aluminum salts, but it is cheap and therefore more practicable.

Carbutt was, I believe, the first to suggest the use of chrome alum in the fixing-bath; but the most exhaustive tests of the alum fixing-baths were made by Lumière and Seyewetz in 1905. I might add further that I have repeated their experiments and confirmed their results except for minor details, which differences may be due to variation of the factors, which can never be exactly the same. These well-known chemists came to the conclusion that the addition of small quantities of sodium bisulphite lye does not inhibit the hardening-action of chrome alum, and that this salt has three times the hardening-action of ordinary potash or ammonia alum. Further, that the quantity of bisulphite and chrome alum must not exceed a certain ratio, otherwise fixation is slowed. The bath is:

Hypo	300 g.	1 pound
Chrome alum	10 g.	233 grs.
Sodium bisulphite lye	20–30 g.	$\frac{3}{4}$–$1\frac{1}{2}$ ozs.
Water	1,000 ccs.	54 fld. ozs.

Dissolve the hypo in three-fourths of the water and the chrome alum in the remainder, using hot water; add to this the sulphite and mix slowly, with constant stirring, with the hypo-solution.



WINTER'S NIGHT
DR. A. R. BENEDICT

THE HARBOR IN WINTER H. L. BRADLEY

Fixation is slightly slower in this bath than in a plain one, but in practice it is not appreciable. Plates that have been fixed in this bath will stand in a temperature of 212° F. without harm, whereas those fixed in a bath containing ordinary alum will not stand more than 167° F. The practical value of this fact is that one can, if in a great hurry, use quite hot water for subsequent washing and thus considerably shorten the time.

It has been stated that a chrome-alum fixing-bath ought not to be used for papers, as it stains the whites, but I have never found the slightest tinge in the whites from its use. Even soaking a print in a 10-percent solution will not stain. It is only when comparatively large quantities of chrome alum are added to a solution of gelatine and coated on paper or glass that any tinge can be detected.

Some few workers have recommended the addition of formalin to the fixing-bath. It certainly possesses one advantage over the alums, and that is it does not decompose hypo, but my experience is that it has a very great tendency to cause subsequent peeling of the film. Further than that, the bath discolors much more readily, due to the reducing-action of the formaldehyde on the silver salts. If it is used with an acid fixing-bath it at once combines with the acid sodium sulphite caused by the decomposition of the hypo, and formaldehyde-sodium-bisulphite $OH \cdot CH_2 \cdot SO_3Na$ is formed, and this is an alkali which combines with any trace of the developer that may be carried over into the fixing-bath. Its use, therefore, is not to be recommended.

It is as well to point out that the addition of an acid or alum to a hypo-solution should never be made without the simultaneous use of sulphite, and that if too much is used there will be a rapid deposition of sulphur, which continues indefinitely until all the hypo is decomposed. The bath therefore loses its fixing-properties, and the negative may be covered with sulphur.

In conclusion, I think that a plain acid fixing-bath made by the addition of the commercial bisulphite lye in a not greater ratio than 20-percent of the total quantity of dry hypo used is the most satisfactory of all baths. It has a distinct hardening-effect, at once arrests development and the disposition of sulphur is much delayed; such a bath will keep clear at least three months.

The End of the Quest

Respectfully inscribed to the modern school of retouchers

WILLIAM LUDLUM, JR.

THE explorers of old braved the fearful unknown,
  The wrath of the sea and the sky;
Far into the West, where the blazing sun dipped,
  They sailed them, to do or to die.

One dream held they all in their venturesome quest —
  The Fountain of Youth would they taste;
And this will-o'-the-wisp buoyed them up as they sailed
  On the breast of the desolate waste.

They sailed, and they sailed, through the months and the years,
  A faithful and valiant crew;
But the land at the dip of the westering sun
  Fulfilment of dreams never knew.

That youth which they sought, with a courage sublime,
  To old age quickly faded and died;
And their bones, in strange forests, found rest in the mould
  That their wearying feet had defied.

Of their dust naught is left; but the end of their trail
  Surely found them a rest by the shore
Where the Waters of Life gently welcomed the craft
  That their spirit of faithfulness bore.

. . . .

As for me, I have found, without seeking, an art(?)
  To replace all the sleekness of youth;
And my face, from the picture, stares, smooth as a babe's —
  A likeness in all but — the truth.

I have found, as I say, but regret the sad fact,
  That the marks of my living must flee;
I can scarcely believe, as I gaze on the print,
  That the picture 's intended for me.

Battle-scarred is my phiz with the lines of my toil —
  Marks of worth, won by brain and by brawn;
But the thrice-cursed retoucher has scraped them away —
  And I find all my character gone.

"Put them back!" I exclaim, "all the marks I have earned;
  The lines of my face are my own!
This smoothed-out production, all shaven and shorn,
  I denounce and defy and disown!"

EDITORIAL

Fictitious Photographic News

ALTHOUGH nearly every important newspaper in the world has a staff photographer — sometimes several — it seems to lack some one who is sufficiently acquainted with photographic activities to pass intelligent judgment on news-items sent in for publication.

Our readers may remember the story circulated in the daily press about a year ago, of a little girl, in Kansas, whose extraordinary beauty had attracted the attention of notable artists and art-societies, and who was to be exhibited in the larger cities of America and Canada. Tracing the report to its source, we discovered that the father of the child, a professional photographer of ordinary standing but imbued with commercial instincts, had invented the story and given it to the press. The result was that he did a profitable business in the sale of photographs of his little girl, who, however, was no better looking than thousands of others. There is no proof that she was ever exhibited.

Several months ago many of the daily papers published the picture of a young woman, with the statement that she had been pronounced the prettiest girl in this country by the professional photographers of America at their annual convention in Indianapolis, last July. Investigating this report, we found it to be the product of the brain of a Philadelphia photographer. It was a lie from beginning to end, and neither the photographer nor the model could lay claim to any meritorious distinction. It was a clever ruse to exploit the public press for notoriety and gain.

One of the latest tales is of a more serious nature. It alleges that a professional — no names whatever are given — took a package of photographs weighing two and a half pounds to the post-office to be mailed in the first zone. He was told that it would cost twenty-two cents (twenty cents is the correct amount). He then asked what it would cost by parcel-post, if there were four pounds of it, and he was told eight cents.

"So I went back to the studio," the narrator continues, "and put one and one-half pounds of boards by the side of the pictures and mailed them for eight cents. Since then, whenever I have two pounds or more of photographs to mail, I just put enough boards around them to make them weigh four pounds, and I find that I get well paid for the scrap lumber used. If all the photographers were to adopt the same method, the Post-office Department would surely get wise to the fact that it was carrying much more weight than is necessary, and for less money."

This is obviously a falsehood, for the very simple reason that photographs cannot be sent by parcel-post at all, but by third-class mail, namely, at the rate of two ounces for one cent, or, if one chooses, by first-class mail, i.e., the package sealed, and secured against inspection. Photographers have long been clamoring for parcel-post, but the Post-office Department has refused to grant the request. What the newspaper that printed this tale expected to gain is not clear.

In any event, important and reliable photographic news should always be looked for in the photographic press, although it is not always infallible, and an occasional error is likely to creep in.

Fraudulent Photographic Novelties

WHENEVER a person buys a camera of standard make and in perfect-working order, he is sure that it will yield satisfactory results, and that if he has even a fair degree of intelligence, he, himself, can produce good pictures from start to finish. If he should be in doubt, and desire to convince himself of the merits of the camera, he may persuade the dealer to let him take it on trial for a few days. The dealer would be justified to make a charge for this service, and an additional one if there is no sale and the equipment shows evidence of use. In any event, with a camera of standard make, the buyer is reasonably sure of success, even if he only presses the button — amid proper conditions, of course — and lets the photo-finisher do the rest. But if the dealer declines to guarantee the apparatus, despite the strong claims made for it by the maker, something is rotten in the state of Denmark!

The aim of every dealer should be to satisfy and hold a customer. To deceive him, and to subject him to fruitless trouble and expense in testing an equipment, is fatal. No novelty of sound merit need wait long for endorsements of reputable experts. Pompous and misleading representations made by the manufacturer, and repeated persuasively by paid agents, spell failure sooner or later, and have a tendency to hamper the sale of similar products of whose thorough excellence there is not the least question.

PHOTO-ERA MONTHLY COMPETITION

For Advanced Photographers

Closing the last day of every month. Address all prints to PHOTO-ERA, Monthly Competition, 383 Boylston Street, Boston, U. S. A.

Prizes

First Prize: Value $10.00.

Second Prize: Value $5.00.

Third Prize: Value $2.50.

Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

Prizes may be chosen by the winner, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in PHOTO-ERA, or in books. If preferred, the winner of a first prize may have a solid silver cup, of artistic design, suitably engraved.

Rules

1. This competition is free and open to any camerist desiring to enter.

2. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. ***Subjects which have appeared in other publications are not eligible, nor may duplicate prints be sold, or entered in competition elsewhere, before Photo-Era awards are announced.*** Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

3. *Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data.*

4. *Each print entered must bear the maker's name, address, the title of the picture and the name and month of the competition, and should be accompanied by a letter,* SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what competition it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA, unless otherwise requested by the contestant. If suitable, they will be published in PHOTO-ERA, full credit in each case being given to the maker.

6. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15, unless they are packed with *double thicknesses of* ***stiff*** *corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express very cheaply and with indemnity against loss.

7. The prints winning prizes or Honorable Mention in the twelve successive competitions of every year constitute a circulating collection which will be sent for public exhibition to camera-clubs, art-clubs and educational institutions throughout the country. The only charge is prepayment of expressage to the next destination on the route-list. This collection is every year of rare beauty and exceptional educational value.

Awards — Winter Street-Scenes
Closed December 31, 1915

First Prize: None awarded.

Second Prize: W. R. Bradford.

Third Prize: William S. Davis.

Honorable Mention: J. H. Field, Alexander Murray and F. R. Smalley.

Special commendation is due the following workers for meritorious prints: J. F. Eden, E. D. Leppert, Dr. C. W. Pratt, Alice Willis, Oscar G. Whiting.

Subjects for Competition

"American Scenic Beauties." Closes February 29.
"Home-Portraits." Closes March 31.
"Subject for PHOTO-ERA Cover." Closes April 30.
"Miscellaneous." Closes May 31.
"Speed-Pictures." Closes June 30.

Photo-Era Prize-Cup

IN deference to the wishes of prize-winners, the Publisher will give them the choice of photographic supplies to the full amount of the First Prize ($10.00), or a solid silver cup of artistic and original design, suitably inscribed, as shown in the accompanying illustration.

Plate-Grain in Enlarging

MR. ERNEST MARRIAGE has contributed a valuable article on this subject to "Penrose's Annual" in which he illustrates the difference between the results with fast and slow plates by reproductions of two nine-time enlargements. That made from one of the fastest plates obtainable has a coarse texture resembling that of a pigmented oil-print, whereas the other, from a very slow plate, shows but slight traces of any grain at all. Other illustrations show that coarse grain may be avoided in the course of development. It is important to note that a great increase of exposure and a large excess of bromide are required to produce the results. If an increase of exposure to the extent of twenty times is necessary, and also much longer development, perhaps after all the simpler and more convenient method is to use a slower and finer grained plate in the first instance.

Subject for Photo-Era Cover — Photo-Era Competition
Closes April 30, 1916

This month's competition calls for a slightly different variety of effort than any that has preceded it. Here is a chance for the worker with a leaning toward broad, decorative poster-like effects, for nothing that depends for its effect on fineness of detail or requires close inspection is suitable for this purpose. The successful magazine-cover must be something that attracts and pleases the eye when seen at a distance; therefore, boldness and contrast — a certain "bigness" in the space — are preferable to delicacy and softness. And preferably it should contain the human element.

A good preparation for work along this line would be a study of the Photo-Era covers that have pleased you in the past. Try to see why they are better than the others, and try to embody their good qualities in your work without, of course, copying their subject-matter.

One that stands out from the rest, to my mind, is the splendid head on the July issue of last year. Not only is this an attractive model (which always is a great point in drawing the attention of the people who know nothing of the fine points of technique or composition, but who always "know what they like"), but there is a fine flow of line, and a splendid space-arrangement. The brim of the hat, nearly paralleling the upper margin of the print, curves downward, to be lost in the line of the hair, which leads along the curl to the line of the dress that completes the semicircle, and brings us to the lower margin by these easy stages. To be sure, the scheme of reproduction and printing has added much to the beauty of this cover — for a white margin would greatly have marred the general effect and killed the beauty of the well-handled lighting.

Similar treatment, however, failed to make an equally good thing of this year's January cover, although it is an exceptionally attractive one, nevertheless, and a welcome relief from the seemingly ever-present pretty girl. The pose is such that it almost necessitates the central location of the head, but such spacing is less pleasing than that on the July cover.

Totally different in treatment is the child's head on last year's November issue. A charming subject in itself, it fails to carry as well as the bolder style of the preceding year.

Turning to landscape-subjects, the harvest-scene on the October cover of last year has a rather too even spacing of sky and foreground, and the interest seems a little divided, therefore, and at a distance the figure is lost. In contrast to this is the masterly silhouette of the church-tower against the clouds, which forms the September cover for the same year. Here also the development and darkness of the print have greatly aided in emphasizing the simplicity and beauty of the composition, and the poetic impression of the whole carries perfectly at any distance.

Of a very different type, but perhaps equally successful, is the fine seascape on the cover for August, 1914. This has a very low horizon-line, and a subject to be used as this is, for the entire cover, should have the horizon either very low or very high, to permit the lettering to be used without interfering with the interest. When figures are used for this type of cover they should be so placed that ample room is left for the lettering — as in the Christmas cover of 1914 and the June cover of 1915, which latter does not show to advantage at a distance.

Special subjects may well be worked up for particular times and seasons. Of course, snow-scenes are suggestive of the winter-months, and they lend themselves splendidly to the broad, simple treatment desirable for this use. If figures are introduced they should be so clad that the figure will stand out from the background, and not blend with it when seen beyond arm's length.

The cover for December, 1910, when seen across the room, shows simply the rather stiffly posed feet and legs of the child, the upper part of the body being lost in the background.

The cover for December, 1913, shows up chiefly as legs and hands, yet it has the happy outdoor winter-spirit. Very much more successful is the last year's February cover. In fact, but for the amazing pose of the figure, it would be an almost perfect composition for the purpose. The very high horizon-line, the broadly treated foreground, broken by pleasing shadows and the well-placed figure, which stands out clearly as a whole, and yet without too violent contrast in any part — all are admirable. This is another subject that has been greatly helped by the scheme of reproduction. A white margin here would have taken all the whiteness from the snow and ruined the whole soft effect of the cover. For in this instance there is softness, yet without loss of the all-important "carrying-quality," the exception which proves the rule.

For the spring-months a large, simple flower-arrangement is appropriate. The cluster of wild roses on the June issue for 1911 seems one of the most successful of its kind. The lighting is admirable, and although both flowers and foliage are full of soft detail the contrast of lights and darks against a neutral ground gives it the needed boldness of design.

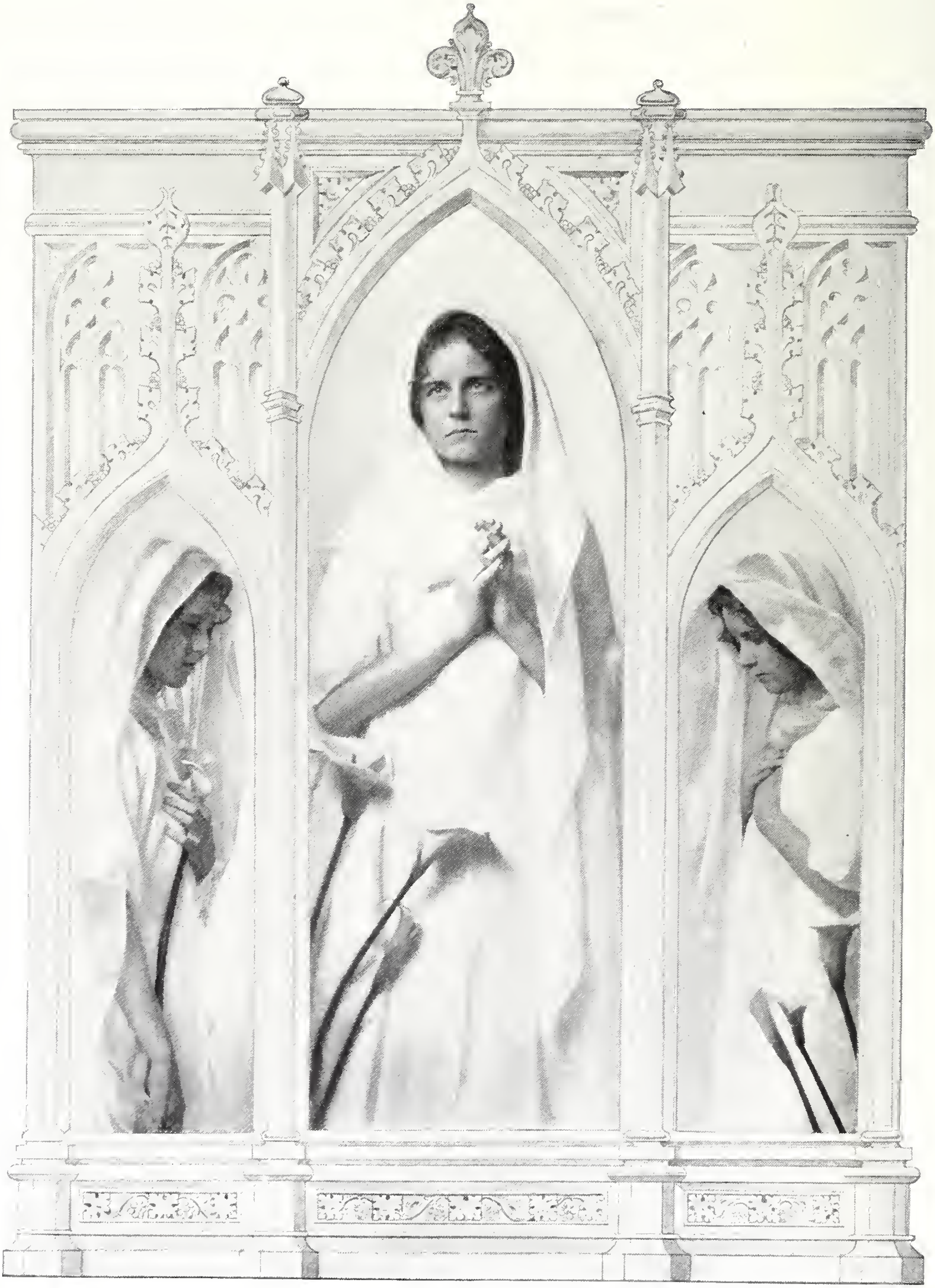
Easter-subjects might be worked up for the month in which that season falls. The Easter-lily lends itself splendidly to decorative treatment, and the triptych seems especially suitable for subjects of this sort. A simple draped figure for the center, with the lilies on each side, or some similar arrangement, should be effective. A gothic-shaped top adds to the ecclesiastic appearance, and gives the impression of a gothic window. Lightness and delicacy are desirable in Easter-subjects, and a study that would lend itself to a vignette treatment similar to the last Christmas-cover should be pleasing.

For July something typifying the Glorious Fourth would be appropriate, and "Young America" is always ready to be photographed for such purposes.

For the Christmas-cover there are many subjects that suggest the joyous season, and the trouble is to get away from the hackneyed. The Christmas-shopper was splendidly done in 1912 by Madam D'Ora, and again very differently treated in 1915. The hanging of the stocking was done in 1911, and the Christmas-morning awakening treated in triptych form in 1909. The Christmas-tree has not been worked out, I believe, and some of the things that have been done might perhaps be improved upon, for "a truth is his at last who best expresses it," and that should hold true of pictorial as well as verbal expression.

A careful study should be made of the requirements as to shape and required space for lettering if one wishes to submit a scheme ready for use by the publisher. This is not required by the rules of the contest, but would be an interesting and illuminating study for the contestant. The print alone may be submitted, and its treatment left to the judgment of the publisher.

As we have looked over our files of Photo-Era the covers that have seemed most satisfactory, then, are those where the design has been large and bold, standing out well from the background, those where the spacing has been carefully thought out, and where a decorative design has been apparent. In the particularly pleasing July cover one can imagine how the



AN EASTER-TRIPTYCH

KATHERINE BINGHAM

SECOND PRIZE
WINTER
STREET-SCENES

WINTER W. R. BRADFORD

balance would have been destroyed had the whole of the hat been included, throwing the head lower in the picture-space, and making it proportionately smaller. A similar disarrangement would result from including more at the right side

Look well to your space-arrangements, then — trim ruthlessly, and finally, enlarge, if necessary, rather than include in your finished product anything that is unessential to the concise saying of what you wish your cover to say. Don't fail to submit your picture to the test of distance. When seen from across the room you may find that something entirely irrelevant to the main theme stands out with undue prominence, and the thing you wish to emphasize proves subordinate. Work it up until it holds its own at a distance before submitting it to the judges.

Katherine Bingham.

Stripping Gelatine Dryplates

Among the notes from the Research Laboratory of the Eastman Kodak Company the following method of stripping gelatine dryplates is recommended by S. M. Furnald.

"A solution is made as follows:

4-percent sodium fluoride	2 parts
Formaline (40-percent formaldehyde)	1 part

"The portion of film to be stripped is first cut around with a knife. The solution of fluoride and formaline may be flowed over the plate or applied with a camel-hair brush to the portion of the film to be stripped. The film will become loosened from the glass in about one minute and may then be lifted easily by applying over it a piece of dampened paper, lifting carefully one corner and stripping the paper and film away together.

"If reversal of the film is required, it is easily transferred to a second piece of paper, and from that to the final support.

"The glass on which the film is to be laid should be perfectly clean and flowed with a 5-percent solution of gum arabic. A little glycerine added to the gum solution tends to improve the condition of the stripped film, which otherwise becomes rather over-dry and horny, owing to the formaline.

"With small portions of film there is very little danger of distortion or tearing, but if the plate is first bathed for ten minutes in formaline before applying the stripping-solution, the film will strip equally well, and is tougher and less liable to distortion.

"When stripping large films the plate may first be flowed with

Collodion	30 cc.
Glycerine	2 cc.

and, so soon as the collodion film has become set, flowed or immersed in the fluoride and formaline solution; the time required for loosening the film may be slightly longer, but this method gives a tough rubbery film, considerably stronger than film stripped without the collodion coating."

◆

The admixture of photography and handwork, in such a manner that the mixture is apparent, is a violation of unity, and as such is to be avoided; but it is perfectly true that often the desired effect cannot be obtained without personal intervention, and the writer holds it to be justifiable in such cases to work on either the negative or the print, to any extent that may be necessary, taking care that the handwork does not show.—Paul Lewis Anderson, in *Pictorial Landscape-Photography*.

THE CRUCIBLE

A MONTHLY DIGEST OF PRACTICAL FACTS FOR PHOTOGRAPHIC WORKERS

With Reviews of Foreign Magazines, Progress and Investigation

Edited by PHIL M. RILEY

Readers are encouraged to contribute their favorite methods for publication in this department
Address all such communications to The Crucible, PHOTO-ERA, 383 Boylston Street, Boston, U. S. A.

Portrait-Films in Architectural Work

Unforeseen circumstances often provide the means to popularize new products. This is the case of Eastman Portrait-Film, intended primarily for portraiture, and particularly for home-portraiture, where light weight and consequent easy portability are objects. The scarcity of glass, due to the war, has greatly increased the price of dryplates; so much so that at the time of writing, December 24, 1915, Standard Orthonon plates, 8 x 10, are selling for $2.40 a dozen against $1.92 for portrait-film. This difference in price has done much to introduce the new sensitive material among professional photographers, who are notably slow to adopt new methods and materials until they have been proved an assured success.

Of course it was inevitable that there should be scepticism, and the belief that even so thick a film would not lie flat during exposure and would be difficult to handle in development, but these fears have taken flight in the face of splendid results on every hand. The rapidity, long scale of gradations, color-values, very slight halation-tendency and clean-working qualities have made instant appeal to every worker who has tried these films, and their light weight, unbreakable character and compact storage-requirements are each potent arguments.

Success in professional portraiture naturally led to trials in other fields, and many workers are now using the film for commercial work of many sorts. The most severe test which has come to my attention is that of Mr. Paul J. Weber, of Dorchester Centre, Mass., who has been using the film exclusively in architectural work for architects, builders and other contractors of residences, churches and public buildings with the utmost success. His first trials with the clips intended to adapt ordinary plate-holders to the use of portrait-film indicated the necessity of something better, but with the special holders having grooves to hold the film on all four sides in an absolutely flat focal plane he has not lost a single negative, the important architectural lines, verticals and horizontals, being absolutely straight and true. These special holders are sold at the price of regular holders, and a set costs no more than would be the loss of one good job because of the films not being flat. Although the tendency is toward somewhat greater softness than with a plate, this can easily be offset, if so desired, by stronger development or the use of a hard paper.

The Diminution of Sensitiveness by Amidol

Photographische Korrespondenz calls attention to the fact that on bathing a highly sensitive plate in an acid-amidol solution for thirty minutes, and then washing and drying, a considerable diminution of speed was noticed.

Cleaning the Film from Old Negatives

At the present time, when the need of re-coating old negative-glass is becoming more and more apparent, the simple method of cleaning such glass recently advocated by *The British Journal of Photography* will be of interest. While the method may not work equally well with all brands of plates, in the majority of cases it will permit the gelatine coating to be removed with the minimum of labor.

"A pair of lengths of stout string are laid on the table a few inches apart and a negative laid upon them, the strings then looped backwards, a second negative then laid on, and a pile of a couple of dozen or so thus made, with the strings separating each plate. This block is then tied up like a parcel, with a second piece of string, and put to soak in an acid mixture consisting of 1 part of sulphuric acid, with, say, 10 parts of water or 1 part of commercial spirits of salt mixed with 5 parts of water. Of course, this acid mixture must not be used in any metal vessel; an earthenware bread-pan is a convenient receptacle. By adopting the plan of tying the plates in bundles all contact of the fingers with the acid mixture can be avoided, the bundles being immersed in the acid bath and dished out again afterwards with a piece of stout copper wire bent into a hook. Each bunch is then dipped straight from the acid into a strong cold solution of ordinary washing-soda. After a few minutes in this bath the films will come away from the plates practically whole; there is no need to use care to get off every bit of emulsion, as there is when simply using treatment with hot water."

Composing the Picture: Slap-dash vs. Deliberation

A well-known photographer writing in these columns has expressed the opinion that the pictorial quality of the photograph is decided by the time the exposure is made; in other words, that the essence of picture-making lies in the arrangement of the subject on the film or plate; that is to say, in its composition. It is noteworthy that the demand for "control" methods, with all the unphotographic quality they too often bring, has grown in proportion to the growth of mere off-hand negative-making. The photographer who comes back at the end of the day with a dozen or so of exposures is much more likely to require some printing-method which will help him to hide their shortcomings than the photographer who has been so critical about composition that a whole day has not sufficed for more than one or two.

It is only too evident that many of the faults in composition which are to be seen in present-day photographs are the result of haste — haste for which the photographer must bear the blame, but which he is tempted to attribute to the hand-camera.

THIRD PRIZE
WINTER
STREET-SCENES

WHEN DRIFTING SNOWS LIE ON THE ROAD — WILLIAM S. DAVIS

It is not only that the amateur photographer himself has been directly affected in his work: the world in general has come to look upon the taking of a photograph as a thing that needs only a few moments. If we are with a party of friends they will offer to "wait a minute" while the photographer stops to take a photograph. How can deliberate picture-making be done in such circumstances? There are four or five persons, perhaps, looking on, conscious that their own amusement is being interrupted for the benefit of the cameraman, while he is certain to be hurried and hampered by the thought that he must not keep them waiting too long. Work that has been produced in circumstances such as these may do well enough for notes of a holiday, but it cannot be anything more.

Picture-making by photography is necessarily a solitary, or an almost solitary, pursuit. Only when we feel absolutely free to take just as much time as we like over the exposure of a single plate is there a reasonable presumption that the composition of the picture will be the best we can make it. We must try different standpoints, different heights for the camera, long-focus or short-focus lenses, and, in general, take not merely as much trouble as the painter would do, but more. He may settle on his viewpoint in a comparatively short time, for much of his composition is thought out afterwards; all that, in fact, which depends merely on omission, and often much that is done by rearrangement. But the photographer must do this before he puts the actual photography in hand. A movement of a few feet may make little difference to the painter; it may make all the difference in the world to the photographer by the presence or absence of some near object that the painter can deal with simply by not painting it.

Hence, to do work that shall be more than mere casual snap-shooting we must have plenty of time. Small plates, which cost at the most a penny or two, call for just as much thought as if we were working 12 x 15; if anything, they call for more, as it is less easy on the small size to see clearly what we are about. Nothing can be more certain than that the adoption of small sizes, the extreme cheapness of the materials, and the comparatively light labor involved in making a negative, have combined to increase to an enormous extent the proportion of failures to successes.

The photographer who will score in his picture-making is he who can rise above such considerations, or rather who can ignore them, and who will give to the exposure of a $2\frac{1}{2}$ x $3\frac{1}{2}$ plate just as much careful consideration as did his predecessor working home-made plates or paper in 10 x 12 or larger sizes. He may be able to do this more quickly, in consequence of aptitude, training, and the greater portability and handiness of his outfit; but, allowing for all these, he still cannot hope to produce a picture, worth calling such, in a few brief moments while a party of his friends on foot or in a car is kept waiting.

W. Hayes, in *Photography and Focus.*

Adjusting the Original on the Copyboard

R. Merritt gives the following hint for saving time in placing an original to be copied upon the easel when it is required to come in the center of the plate. Instead of pinning up the original haphazard, and then adjusting the camera to the position of the print, which is the method adopted by most photographers, just put in a small stop and place the photograph so that it is reflected in the center of the stop. It will then be found to be in position on the screen. This method will save time.

The British Journal of Photography.

THE ROUND ROBIN GUILD MONTHLY COMPETITION

For Beginners Only

Closing the last day of every month. Address all prints to PHOTO-ERA, Round Robin Guild Competition, 383 Boylston Street, Boston, U. S. A.

Restrictions

All Guild members are eligible in these competitions provided they never have received a prize from Photo-Era other than in the Beginners' Class. Any one who has received only Honorable Mention in the Photo-Era Monthly Competition for advanced workers still remains eligible in the Round Robin Guild Monthly Competition for beginners; but upon winning a prize in the Advanced Class, one cannot again participate in the Beginners' Class. Of course, beginners are at liberty to enter the Advanced Class whenever they so desire.

Prizes

First Prize: Value $5.00.

Second Prize: Value $2.50.

Third Prize: Value $1.50.

Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

A certificate of award, printed on parchment paper, will be sent on request.

Subject for each contest is ***"Miscellaneous";*** but only original prints are desired.

Prizes, chosen by the winner, will be awarded in photographic materials sold by any dealer or manufacturer who advertises in Photo-Era, or in books.

Rules

1. These competitions are free and open to all members of the Round Robin Guild. Membership is free to all subscribers; also to regular purchasers of Photo-Era on receipt of their name and address, for registration, and that of their dealer.

2. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. ***Subjects which have appeared in other publications are not eligible, nor may duplicate prints be sold, or entered in competition elsewhere, before Photo-Era awards are announced.*** Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

3. *Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data.* ***Criticism on request.***

4. *Each print entered must bear the maker's name, address, Guild-number, the title of the picture and the name and month of the competition, and should be accompanied by a letter,* SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what contest it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of Photo-Era, unless otherwise requested by the contestant. If suitable, they will be published in Photo-Era, full credit being given.

6. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15, unless they are packed with *double thicknesses of **stiff** corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express very cheaply and with indemnity against loss.

Awards — Beginners' Contest

Closed December 31, 1915

First Prize: H. B. Rudolph.

Second Prize: Vincent Driscoll.

Third Prize: C. Ulrich, Jr.

Honorable Mention: Ralph D. Count, J. Louis Cunningham, Martha Curry, Victor L. Guidette, Charles D. Meservey, Louis R. Murray, Earl A. Newhall, Joseph V. Phelan, Pitt P. Pinckney, Wm. A. Ray, Mrs. H. G. Reed, Arthur M. Roach, Harlow L. Rockwell, Martinique M. Saucier, William J. Wilson, Elizabeth B. Wotkyns.

Special commendation is due the following workers for meritorious prints: Margaret Anderson, Harry W. Cook, V. Max Kennery, N. Lihon, C. A. Pierce, Fred W. Ruttger, Kenneth D. Smith, M. C. Still, Cornelia F. White, Glenn O. Young.

Why Every Beginner Should Compete

The trouble with most competitions is that they place the beginner at a disadvantage. If advanced workers be allowed to compete, beginners have little chance to win prizes, and so quickly lose interest after a few trials.

There are two monthly competitions in which prints may be entered with prizes commensurate with the value of the subjects likely to be entered. They are: The Round Robin Guild Competition and the Photo-Era Competition. The former is the better one for a beginner to enter first, though he may, whenever it pleases him, participate in the latter.

As soon as one has been awarded a prize in the Photo-Era Competition, he may consider himself an advanced worker, so far as Photo-Era records are concerned, and after that time, naturally, he will not care to be announced as the winner of a prize in the Beginners' Class, but will prefer always to compete in the Photo-Era Competition for advanced workers. In accordance with this natural impulse, it has been made a rule by the Publisher that prize-winners in the Advanced Class may not compete in the Beginners' Class.

To measure skill with other beginners tends to maintain interest in the competition every month. Competent judges select the prize-winning prints, and if one does not find his among them there is a good reason. Sending a print which failed to the Guild Editor for criticism will disclose what it was, and if the error be technical rather than artistic, a request to the Guild Editor for suggestions how to avoid the trouble will bring forth expert information. The Round Robin Guild Departments form an endless chain of advice and assistance if members will connect the links.

THE ROUND ROBIN GUILD

An Association of Beginners in Photography

Conducted by KATHERINE BINGHAM

This association, conducted under the auspices of PHOTO-ERA, and of which PHOTO-ERA is the official organ, is intended primarily for the benefit of beginners in photography. The aim of the association is to assist photographers by giving them information, advice and criticism in the Guild pages of PHOTO-ERA and by personal correspondence. Membership is free to subscribers and regular purchasers of the magazine sending name and address to PHOTO-ERA, The Round Robin Guild, 383 Boylston Street, Boston, U. S. A.

Regarding Exposure

The great puzzle to new workers in the photographic art is nearly always to determine how long an exposure to give under varying conditions of light. When the sun shines brightly on his subject and he can take a snapshot, he is all right; but when the day is cloudy, the object much in shadow, or indoors, he is at a loss.

As previously suggested, a study of the workings of the shutter when there is no film in the camera and the back may be removed for better observation should be a help to the better understanding of its mechanism. The simpler type of shutter having the letters I., B. and T. is perhaps the most common. When the indicator stands at I. the worker feels at home and fairly sure of his results; but B. and T. spell mystery and uncertainty for him.

The instantaneous exposure can be depended upon to give good results only on bright days and on a well-lighted subject. Figures on piazzas, in deep shade or against the light, taken with this speed, are almost sure to be failures. At the seashore, or in the snow, the light is stronger, and many things are possible that in other places would be out of the question.

The drawback in the use of longer exposures than the snapshot is the necessity to place the camera on some firm support, as to hold it steadily in the hand for a bulb- or time-exposure is impossible.

If the workings of the shutter have been observed it has been determined that when the indicator stands on B. (bulb) the shutter remains open while the lever is held down, or the pressure maintained on the bulb, and closes when the pressure is removed. This makes possible shorter exposures than could be given if the lever must be pressed twice, as for time-exposures, in which case one pressure opens the shutter, which remains open until the lever is pressed the second time.

When pictures are to be taken out of doors on a dark day or in heavy shade, the camera should be placed on a table, rested on a fence or some stable support where it can be held firmly in place with one hand while with the other the bulb or lever is pressed and at once released. As short an exposure as can be given by this method will usually be long enough for such subjects as we have mentioned. Nearby, dark objects require more time than more distant ones or those lighter in color. A group on a veranda might take longer than the shortest possible time, but no outdoor-subject will require a very lengthy exposure.

The place where the time-exposure is needed is when the camera is taken within walls. Not until one has done experimenting with a camera does one realize the amazing difference between the strongest indoor-light and the weakest outdoor-light. The ordinary snapshot is about one twenty-fifth of a second. The short bulb-exposure would be one-half to one second, while the very best indoor-light would require some five seconds, and from that up to 15 or 20 minutes, or even, in very dark rooms, an hour or so. It is hard to give any general rule for indoor-exposures, because of the many elements that affect the strength of the light.

If the room has more than one window, and the walls are light, so that the light is well reflected and distributed, and the light outside is good, an exposure of five seconds should give good results with the largest stop in the lens. With more than one window, and dark walls that absorb the light, the time should be doubled at least. With the same conditions inside, but on a dull day, the exposure will be three or four times as long, according to the degree of dulness. If a room has only one window, other things being equal, the exposure should be rather more than double that given for a room with two or more windows.

Reference was made above to the stop used. On most cameras of the type of which we are speaking there is a little slide which can be pulled out to give three sizes of openings in front of the lens. In its usual position — pushed in — the largest opening is in place, and this is the one to use in all ordinary circumstances; but sometimes, in interiors especially, some objects will be very near the lens and would not be in focus with the largest stop. In this case the next smaller opening should be pulled into place, and twice as long an exposure given as with the larger opening.

In all work where a time-exposure is to be given, the greatest care is required to make sure that the camera is not moved in the slightest degree, or a blurred image will result. Of course the best thing to use is a tripod, but if this is not available some other support must be found. A step-ladder is an always-available article, which allows the distance from the floor to be varied, and for that reason is very satisfactory.

A height about on a level with the eyes when seated is usually good, but by looking in the finder it can be determined whether this includes too much of floor or ceiling, and the height regulated accordingly. If a table is used be sure the camera stands near enough to the front edge so that the table-top will not cut off the foreground. Whatever support is used, one hand should be firmly pressed on the top of the camera while the lever is pressed with the other to open the lens, then slowly and carefully removed so that no jar or movement is imparted to camera or support. If the time is to be counted in seconds, and no watch or clock with a second-hand is available, a close guess can be made by counting the pulse, which is a little faster than one beat a second, being sixty-six to seventy-two to the minute. When the time is up, place the hand again on the camera, while the lever is pressed the second time to close the shutter. Do not walk around much or allow doors to be slammed while the exposure is in progress, or the camera may be jarred out of adjustment.

FIRST PRIZE
BEGINNERS'
CONTEST

OAKS — H. B. RUDOLPH

Suitable Backgrounds for Outdoor-Groups

When one's interest is centered on the people whom one wishes to perpetuate on one's film it is very easy for the eye to see simply the group in the foreground and overlook entirely the things which are behind it. The camera's eye, however, is not so discriminating, but reproduces everything in front of it with disconcerting impartiality; and on seeing the print we are astonished to find our group that stood out so clearly in our mind's eye strangely mixed up with an entirely unnoticed background.

It behooves us, therefore, to give a little consideration to the surroundings of our figures. An almost ideal background is furnished by a smooth turfed bank, which gives a plain dark ground in summer and a pure white one in winter. Foliage in shadow also gives a good unobtrusive ground. When in sun, however, the little catchy lights on the leaves make it rather "busy."

Groups taken on the street are sometimes quite satisfactory. If possible, there should be enough distance so that the heads of the figures cut against the walk behind instead of against distant houses or trees. The converging lines of the sidewalk lead to the figures, and as a rule the composition is not bad.

It is seldom satisfactory to have heads cut against the sky, as there is prone to be a slight halation or spreading of the light, with a consequent blurring of outlines. The extreme whiteness of the sky also makes the faces appear rather dark by contrast.

One very common background, but a very unattractive one, is the side of a house with its parallel lines of clapboards. Usually a vine-screened corner may be found where these ugly lines are covered; if not, best get right away from the house, and use lawn or shrubbery as your setting. Sometimes it is possible to get a far distant view, a hillside across the valley or something of the sort, as a "back-drop," and it usually forms a very effective one.

The chief desideratum is simplicity. Nothing that in itself would make a picture is suitable as a background, for the interest must not be divided between the figures and the landscape.

A Tungsten Arc-Lamp

The wonders of the tungsten incandescent electric bulb are apparently never-ceasing. A further development of the nitrogen-filled type of bulb, known as the half-watt lamp in England, has recently been described in *The Journal of the Institution of Electrical Engineers*. This latest product of the Edison and Swan United Electric Light Company laboratories yields its light from an actual arc struck between tungsten electrodes rather than from an incandescent filament. Various devices have been used to overcome the difficulty of striking the arc, chief among them being an ironizing filament which is switched off as soon as the arc is struck. As the new lamp can be made of exceedingly great intensity it will find its chief photographic use in high-power projection, and a lamp of such resistance as to adapt it to any voltage in common use has already been placed on the English market for lantern-work. If its power is equal to that of the carbon-arc, as claimed, its constancy and freedom of sudden fluctuations will render it of great value not only for lantern-slide and motion-picture projection but for photographic enlarging, especially when a light of high power is necessary, as when enlarging on gaslight paper. For portraiture a lamp providing such a concentrated light-source probably offers no advantages over the filament nitrogen bulb.

Answers to Correspondents

Subscribers and regular readers wishing information upon any point in connection with their photographic work are invited to make use of this department. Address all inquiries to Correspondence Department, Photo-Era, *383 Boylston Street, Boston, U. S. A. If a personal reply is desired, a self-addressed, stamped envelope must be enclosed.*

J. G. W.— **There should be no trouble in copying sepia prints** provided you adopt an orthochromatic plate of medium speed and a color-filter of about eight-time strength. Your ordinary developer will prove quite satisfactory if exposure and other conditions are properly taken care of.

M. L.— **Perfectly sharp pictures are no longer considered artistic.** Many years ago amateurs felt it necessary to use a very small stop in order that the plate should be focused sharply from corner to corner throughout the picture. This is no longer considered a feat, and larger stops are used, so that a differentiation of picture-planes may be obtained. A large stop also diminishes the length of exposure, and in other ways is an advantage to the pictorial worker.

M. C. S.— **A lens for landscape-work ought to be of a focal length at least equal to the diagonal of the plate,** although for general work, including other subjects than landscape, a 12-inch lens would give good service on an 8 x 10 plate. For landscape-work alone, a 13-inch lens would be the minimum, 21-inch the ideal, and anything between 15 and 21 inches a very good all-around compromise.

We have no catalog listing a Wollensak Rapid Convertible of 12-inch focus, although there is a Three-Focus Symmetrical of 12½-inch focus. The focal lengths of the front and rear combinations of this lens are respectively 28½ and 20 inches. Thus theoretically a 20-inch bellows-extension would be sufficient for the rear combination, although an inch or so more is really needed for focusing-latitude. Should the lens you have possess front and rear combinations of equal focal length, the focal length will be twice the combined focus, or 24 inches.

M. F. L.— **A slow plate of considerable latitude is desirable for making the positive preliminary to an enlarged negative.** A Seed 23 or plate of similar speed or slower is excellent. The same plate may be used for the negative. A developer is preferable which will give a blue-black image, the quality of which is more easily judged than one somewhat stained, as by pyro. Edinol, Rodinal, hydro-metol or Glycin are all good. Probably the most satisfactory method is to make a contact positive of the best possible quality and enlarge from that.

As to relative speeds, Eastman Permanent Bromide paper requires approximately twenty-five times the exposure of Kodak N. C. film or plates of corresponding emulsion.

S. A. W.— **To transform numbers in the F-system of diaphragm-marking to numbers in the U. S. system** is very easy. So transformed, the numbers 8, 12.5, 18, 25 and 36 on your Ica Atom camera become U. S. 4, 9.77, 20, 39 and 81. The rule is to divide F/4 by the ratio to be converted, and square the result. For instance:

$$\frac{F}{4} \div \frac{F}{8} = \frac{F}{4} \times \frac{8}{F} = 2 \times 2 = 4$$

S. A. W.— **The pyro-acetone developer mentioned on page 137 of Photo-Era for September, 1915,** is not a prepared solution; it must be made up with chemicals bought in bulk. Liquid acetone you can buy of any large chemical house, such as Merck & Co., New York City. Also, you will find that most large photo-supply stores stock it, especially those that sell Cramer plates, as pyro-acetone is a popular Cramer formula.

Mr. Zerbe advises us that the average time of development will be from ten to fifteen minutes. It is not necessary to carry development too far for greater density, because a negative developed with pyro-acetone will yield all gradations although very thin. The time to stop development is when the details in the shadows appear; indeed, it is almost impossible to get great density with the small amount of pyro used in the special formula, although this is not true of the normal developer.

EVENING-REFLECTIONS VINCENT DRISCOLL

SECOND PRIZE — BEGINNERS' CONTEST

Print-Criticism

Address all prints for criticism, enclosing return-postage at the rate of one cent for each two ounces or fraction thereof, to Correspondence Department, Photo-Era, *383 Boylston Street, Boston, U. S. A. Prints must bear the maker's name and address, and be accompanied by a letter, sent separately, giving full particulars of date, light, plate or film, stop used, exposure, developer and printing-process.*

E. G. R.— Your picture, "Inspiration," representing an organist in ecclesiastical robes, seated at the instrument, is too realistic and mechanically perfect to stir the imagination. There are several objects in the picture which detract from the simplicity of the arrangement — the light behind the organist's head, the one over the keyboard and the music on the rack. In a Photo-Era competition everything in a photograph that is actually superfluous should be omitted; and remember that simplicity is equivalent to force and directness of the theme.

J. S. F.— Your film marked 1 appears to have been stale before exposure or to have remained undeveloped a long time after exposure. Such films look fogged in the margins, like this one, and do not develop any contrast. Age, or exposure to heat or dampness are the most frequent causes.

The film marked 2 has been overexposed, which accounts in a measure for its flatness. The mottled appearance looks like that caused by precipitation from a fixing-bath containing alum and which has become old and turbid. This supposition is borne out by the yellow stain which should have been cleared up by a fresh acid-alum hypo-bath, although sometimes, when the developer has been made up from stock-solutions, and the sulphite solution has become too old, there may be so much stain that the fixing-bath will not entirely remove it. Of course this is not the case in the present instance, as you made your solution from a tank-powder at the time of use.

P. H.— The sky-line of "Peeking Out" is hardly forceful or distinctive enough to warrant a foreground absolutely without detail. We believe that a longer exposure would result in a subject of better key throughout and would have been more pleasing.

S. H. G.— Your two attractive subjects appear to have been enlarged from negatives which were underexposed; at least, such is the case in "The Approaching Storm," in which there should be more detail in the mass of trees at the right. The clouds suggest overdevelopment.

W. A. R.— A little more suggestion of detail in the foreground and in the larger tree at the right would considerably improve your subject entitled "The Slowly Sinking Sun." One rarely looks upon such a scene without at least a suggestion of what there is in the foreground. The composition is excellent.

H. C. M.—"Wind Rushes Over the Dunes" and "Silent Silver Lights and Darks" are extremely interesting, as are all of your sea-grass views. The former, we believe, however, suffers somewhat from lack of unity, the two tufts of grass being of virtually equal importance and depth of tone.

W. C. H.— Your Porto Rico scenes comprise an interesting little collection of what appear to be hasty snapshots. Not many of them can be regarded as seriously considered compositions.

From an art standpoint "Light on the Water" and "San Juan Harbor" are the best; the former could probably be improved in the printing by the use of a very soft-working paper.

A. M. H.— Your prints "Into the West" and "A Summer Sea" are both interesting compositions, and the cloud-effect when you made your photographs was excellent. Unfortunately, the exposure seems to have been much too short, so there is no indication of any detail in the shores. This is not true to what the eye sees, and is best avoided. Why not make the horizon-line of "Into the West" level by trimming?

P. H. M.— Your photographs are rather cloud-studies than "Clouds in Landscape," and your attractive prints could be made even more so by the use of a different printing-paper — one which would give more richness of tone.

H. B. R.—"Can't you Talk?" has great possibilities as a subject, but we believe the photograph would have been much more pleasing had the woman not

MONDAY MORNING C. ULRICH, JR.

THIRD PRIZE — BEGINNERS' CONTEST

bent so far forward, so that her face would have shown to better advantage. The light spots in the background are unfortunate and of course can readily be removed.

M. L. E.— Most of your prints are excellent, and all indicate an appreciation of good composition and attractive spacing. "Eucalyptus" and "The Approaching Storm," however, are somewhat lacking in shadow-detail, and the clouds, at least in the print you have sent, are hardly convincing as indicating a storm.

P. M. E.— Enlargement of your outdoor-portrait with care that the face does not become too dark should result in a very pleasing subject. It is now too small for appreciation of its merits.

D. T.— More ample exposure to have lightened the tone of the two trees in "A Dull Winter Day" would have worked considerable improvement, because they are so black that the two have almost equal importance in the composition and so prevent any sense of unity.

H. G. R.— Most of your work seems to be undertimed and overdeveloped, resulting in very strong, harsh highlights. "An Aster-Bed" is well composed except for the self-consciousness of the figures. How much better this would have been if the persons included had been devoting themselves to each other rather than to the camera. The same is true of "An Afternoon on the Lawn," and a horizontal composition, which would have excluded the sky, would have been far better. "Blowing Bubbles" suffers because of the unnecessary amputation of the feet.

L. A. P.—"Vacation Days" is undoubtedly a record of some pleasant event of personal concern and so hardly a subject of general interest. As a composition the girl and the swan are both too near the edge of the print, and an expert would either work out or considerably lower in tone the park-bench in the middle-distance. The quality of the print indicates that the negative has been too strongly developed.

V. A. — There seems to be no justification for the excessively black shadows in most of your compositions. They are not what the eye sees, nor are they pleasing in the photographs.

"Pasture-Land" suffers as a result of the white stone in the foreground, which should be lowered in tone. Of the entire collection "Ice on the Lake" is decidedly the most pleasing.

J. H. W.— It might perhaps be said that the detail in your "Child-Study" is not quite sharp enough, although the faces of the child and doll are amply so. However, had the negative been a trifle less strong, so as to ensure gradation in the white dress, the result would have been far more pleasing. Very likely this defect can be corrected by the use of a softer-working paper.

G. F. A.— You have an attractive subject in "The Fisherman" except for the obtrusive dark spot at the extreme right, which can easily be lightened in tone. We believe that you have carried diffusion decidedly too far.

J. J. N.—"On Their Way" has apparently been enlarged on a medium- or hard-working paper from a negative which is too vigorous. Slight reduction of the negative or the use of a soft-working paper will improve matters considerably.

E. W.—"Silhouette," although by no means a novel idea, is one which often presents interesting possibilities. We recall a similar subject, made at the end of a pier by Charles Vandervelde, which was reproduced in Photo-Era for November, 1907. Your subject has been made from too low a viewpoint, which causes the foreground to be decidedly out of focus, and has not given you enough of the pleasing effect of the water in the distance.

H. G. R.— Of your several home-portraits "When Rebecca went Calling" is the best. Unfortunately your camera was not level and the architectural lines are not plumb, as they invariably should be in such a background.

G. M. B.— Your photographs of waterfalls are excellent in composition, particularly that entitled "The Cascades." The others are characteristic of the effect of long exposure sometimes needed in the woods unless some artificial form of supplementary lighting is employed.

J. P.— Your work would be more attractive if mounted on light-weight cover-paper of appropriate color instead of the stock card-mounts of fanciful design. The highlights of all of these subjects are rather chalky, and suggest overdevelopment of the negative. Perhaps a soft-working paper will improve the results.

C. M. DeB.— Your photograph "Across the Hudson" appeals to us as being a misnomer, for it is obviously an outdoor-portrait, and an excellent one too. While the situation is characteristic of the Hudson River, being taken from the top of the Palisades, toward the lower shore, it is unfortunate that there is not something of a more striking character in the distance to serve as an adequate balance to the figure at the left.

"No Noise and Bustle Here" depicts a scene of natural beauty, although as a composition the many highlights are too widely scattered. They should be controlled by local work on the negative or print, or, better still, by having selected a more suitable time of day and condition of atmosphere for making the negative.

J. W. N.— You have carried diffusion beyond the point of reason in your print "The Garden Wall." The subject presents interesting material, which should have yielded an attractive photograph.

M. C. S.—"Sunset at the Old Stone Bridge" suffers because of the many scattered highlights. A photograph should be made at an hour when these can be avoided.

W. H. F.— A softer-working paper will improve "Be Careful," and why not trim about an inch from the bottom and half as much from the top? It will also be an improvement to trim away the fence and sky from "May," thus centering attention upon the figure and making the face the highest light. Your indoor-portrait is too confined in the space, particularly in regard to more head-room. The background is somewhat confusing and the lighting not sufficiently diffused; apparently the negative has been overdeveloped. Portrait-negatives must be kept rather thin in order to ensure modeling of the face.

H. L. C.— Your print of "Sunshine and Shadow" is not dark enough. Try a softer-working gaslight paper of smooth matte instead of glossy surface, and print several tones deeper.

J. B.— Why not have the water-line of your photograph level? Otherwise the subject is attractive. Always hold the camera level and trim prints carefully to correct slight errors.

J. H. P.—"Minnehaha Falls" is one of those difficult subjects which very few have photographed successfully. More detail is needed in the rocky shores than you have obtained, and a sky printed in from a suitable negative, if necessary, would do much to improve the composition, thus making the falling water the highest light and center of interest.

L. W. W.— Your outdoor child-portrait has been made from an overdeveloped negative which should have been reduced before making an enlargement. This will ensure detail and texture to the face and white dress of the child.

Photo-Era Exposure-Guide

Calculated to give Full Shadow-Detail, at Sea-Level, 42° N. Lat.
For altitudes up to 5000 feet no change need be made. From 5000 to 8000 feet take ¾ of the time in the table. From 8000 to 12000 feet use ½ of the exposure in the table.

Exposure for average landscapes with light foreground, river-scenes, light-colored buildings, monuments, snow-scenes with trees in foreground. For use with Class 1 plates, stop F/8, or U. S. 4. For other plates, or stops, see the tables on the opposite page.

*These figures must be increased up to five times if the light is inclined to be yellow or red.
†Latitude 60° N. multiply by 3 ; 55° × 2 ; 52° × 2 ; 30° × ¾.
‡Latitude 60° N. multiply by 2; 55° × 2 ; 52° × 1½ ; 30° × ¾.
¶Latitude 60° N. multiply by 1¼ ; 55° × 1 ; 52° × 1; 30° × ½.
§Latitude 60° N. multiply by 1¼ ; 55° × 1 ; 52° × 1; 30° × ½.

MONTH AND WEATHER

HOUR	JAN., NOV., DEC. †					FEB., OCT. ‡					MAR., APR., AUG., SEPT. ¶					MAY, JUNE, JULY §				
	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull
11 A.M. to 1 P.M.	1/32	1/16	1/8	1/4	1/2	1/32	1/16	1/8	1/4	1/2	1/50	1/25	1/12	1/6	1/3	1/60	1/30	1/15	1/8	1/4
10–11 A.M. and 1–2 P.M.	1/25	1/12	1/6	1/3	2/3	1/25	1/12	1/6	1/3	2/3	1/40	1/20	1/10	1/5	1/2	1/60	1/30	1/15	1/8	1/4
9–10 A.M. and 2–3 P.M.	1/12*	1/6*	1/3*	2/3*	1*	1/16	1/8	1/4	1/2	1*	1/40	1/20	1/10	1/5	1/2	1/50	1/25	1/12	1/6	1/3
8–9 A.M. and 3–4 P.M.						1/5*	1/2*	1*	1 1/2*	3*	1/30	1/15	1/8	1/3	2/3	1/30	1/15	1/8	1/4	1/2
7–8 A.M. and 4–5 P.M.											1/20	1/10	1/5	1/2	3/4	1/20	1/10	1/5	1/3	2/3
6–7 A.M. and 5–7 P.M.											1/15*	1/8	1/2*	3/4*	1*	1/15	1/8	1/4	1/2	3/4
5–6 A.M. and 6–7 P.M.																1/10*	1/5*	1/3*	2/3*	1 1/2*

The exposures given are approximately correct, provided the shutter-speeds are accurately marked. In case the results are not just what you want, use the tables merely as a basis and increase or decrease the exposure to fit the conditions. Whenever possible keep the shutter-speed uniform and vary the amount of light when necessary by changing the stop. **Focal-plane shutters require only one-third of the exposures stated above.**

SUBJECTS. For other subjects, multiply the exposure for an average landscape by the number given for the class of subject.

1/8 Studies of sky and white clouds.

1/4 Open views of sea and sky ; very distant landscapes ; studies of rather heavy clouds ; sunset- and sunrise-studies.

1/2 Open landscapes without foreground ; open beach, harbor- and shipping-scenes ; yachts under sail ; very light-colored objects ; studies of dark clouds ; snow-scenes with no dark objects ; most telephoto-subjects outdoors ; wooded hills not far distant from lens.

2 Landscapes with medium foreground ; landscapes in fog or mist ; buildings showing both sunny and shady sides ; well-lighted street-scenes ; persons, animals and moving objects at least thirty feet away from the camera.

4 Landscapes with heavy foreground ; buildings or trees occupying most of the picture ; brook-scenes with heavy foliage ; shipping about the docks ; red-brick buildings and other dark objects ; groups outdoors in the shade.

8 Portraits outdoors in the shade; very dark near objects, particularly when the image of the object nearly fills the plate and full shadow-detail is required.

16 to 48 Badly-lighted river-banks, ravines, glades and under the trees. **Wood-interiors** not open to the sky. **Average indoor-portraits** in a well-lighted room, light surroundings.

PLATES. When plates other than those in Class I are used, the exposure indicated above must be multiplied by the number given at the head of the class of plates.

For Perpetual Reference

For other stops multiply by the number in the third column

As all the figures in the table opposite are based upon the use of stop F/8, or U. S. 4, it does not appear here among the ratios for other stops.

U. S. 1	F/4	× 1/4
U. S. 2	F/5.6	× 1/2
U. S. 2.4	F/6.3	× 5/8
U. S. 3	F/7	× 3/4
U. S. 8	F/11	× 2
U. S. 16	F/16	× 4
U. S. 32	F/22	× 8
U. S. 64	F/32	× 16

Example

The factors that determine correct exposure are, first, the strength of light; second, the amount of light and dark in the subject; third, speed of plate or film; fourth, the size of diaphragm used.

To photograph an average landscape with light foreground, in Feb., 2 to 3 P.M., bright sunshine, with plate from Class 1, R. R. Lens, stop F/8 (or U. S. 4). In the table look for "Hour," and under the column headed "Bright Sunshine," note time of exposure, 1/16 second. If a smaller stop is used, for instance, F/16, then to calculate time of exposure multiply the average time given for the F/8 stop by the number in the third column of the table for other stops, opposite the diaphragm chosen. The number opposite F/16 is 4. Multiply 1/16×4=1/4. Hence, the exposure will be 1/4 second.

For other plates consult the table of plate-speeds. If a plate from Class 1/2 be used, multiply the time given for average exposure, F/8 Class 1, by the number of the class. 1/16×1/2=1/32. Hence, the exposure will be 1/32 second.

Speeds of Plates on the American Market

Class-Numbers. No. 1, Photo-Era. No. 2, Wynne. No. 3, Watkins

Class 1/3, P. E. 156, Wy. 350, Wa.
Ilford Monarch
Lumière Sigma
Marion Record
Seed Graflex
Wellington Extreme

Class 1/2, P. E. 128. Wy. 250, Wa.
Ansco Speedex Film
Barnet Super-Speed Ortho.
Central Special
Cramer Crown
Eastman Speed-Film
Hammer Special Ex. Fast
Imperial Flashlight
Seed Gilt Edge 30
Wellington 'Xtra Speedy

Class 3/4, P. E. 120, Wy. 200, Wa.
Barnet Red Seal
Cramer Instantaneous Iso.
Defender Vulcan
Ensign Film
Hammer Extra Fast, B. L.
Ilford Zenith
Imperial Special Sensitive
Paget Extra Special Rapid
Paget Ortho. Extra Special Rapid

Class 1, P. E. 111, Wy. 180, Wa.
American
Ansco Film, N. C.
Atlas Roll-Film
Barnet Extra Rapid
Barnet Ortho. Extra Rapid
Central Comet
Imperial Non-Filter
Imperial Ortho. Special Sensitive
Kodak N. C. Film
Kodoid
Lumière Film and Blue Label
Marion P. S.
Premo Film-Pack
Seed Gilt Edge 27
Standard Imperial Portrait
Standard Polychrome
Stanley Regular
Vulcan Film
Wellington Anti-Screen
Wellington Film
Wellington Speedy
Wellington Iso. Speedy

Class 1 1/4, P. E. 90, Wy. 180, Wa.
Cramer Banner X
Cramer Isonon
Cramer Spectrum
Defender Ortho.
Defender Ortho., N.-H.
Eastman Extra Rapid
Hammer Extra Fast Ortho.
Hammer Non-Halation
Hammer Non-Halation Ortho.
Seed 26x
Seed C. Ortho.
Seed L. Ortho.
Seed Non-Halation
Seed Non-Halation Ortho.
Standard Extra
Standard Orthonon

Class 1 1/2, P. E. 84, Wy. 160, Wa.
Cramer Anchor
Lumière Ortho. A
Lumière Ortho. B

Class 2, P. E. 78, Wy. 120, Wa.
Cramer Medium Iso.
Ilford Rapid Chromatic
Ilford Special Rapid
Imperial Special Rapid
Lumière Panchro. C

Class 3, P. E. 64, Wy. 90, Wa.
Barnet Medium
Barnet Ortho. Medium
Cramer Trichromatic
Hammer Fast
Ilford Chromatic
Ilford Empress
Seed 23
Stanley Commercial
Wellington Landscape

Class 5, P. E. 56, Wy. 60, Wa.
Cramer Commercial
Hammer Slow
Hammer Slow Ortho.
Wellington Ortho. Process

Class 8, P. E. 39, Wy. 30, Wa.
Cramer Contrast
Cramer Slow Iso.
Cramer Slow Iso. Non-Halation
Ilford Halftone
Ilford Ordinary
Seed Process

Class 100, P. E. 11, Wy. 3, Wa.
Lumière Autochrome

OUR ILLUSTRATIONS

WILFRED A. FRENCH

"WINTER'S NIGHT," the subject of this month's cover, and repeated on page 124, as pictured by a well-known camerist, will recall to many the beauty of a scene very similar to this. Where, not many years ago, a moonlit winter-scene was enjoyed in a horse-drawn sleigh and amid tinkling sleigh-bells, the same experience is now had in a less romantic but speedy automobile, and is eminently suggestive of the tremendous change in winter-sports. The serenity of the view expressed in Dr. Benedict's simple composition suggests a feeling of sadness that is almost impossible to repel, though fair Cynthia deigns to vouchsafe a momentary smile. Data: $8\frac{1}{2}$-inch focus; R.R. lens; F/11; $\frac{1}{25}$ second; Eastman N. C. film; hydro-metol; 5 x 7 print on Standard Bromide. Further information, how the picture was actually made, is withheld by the clever and resourceful artist.

There is always an air of adolescence and freshness about the portraits by William Shewell Ellis that is delightful, and reminds one of spring. This busy winner of Eastman prizes is the author of the attractive figure "In Costume," page 102. A feeling of refinement and repose permeates this graceful composition, in which line and gradation blend unanimously. No data.

With the destruction of monuments of architectural art, almost impossible to avoid in the use of modern artillery and the exigencies of war, the thought turns with alarm to the noble structures that lie in the path of invading hosts. Yet it is idle to speculate as to their fate, for that seems to depend not so much upon the caprice of the advancing foes as upon the observance of the rules of war.

It is a fact, though many are not disposed to believe it, that when the German army advanced towards Paris, shortly after the beginning of the present war — September, 1914 — it showed a spirit of consideration and magnanimity in marked contrast to the fierceness of its attacks on Louvain and Liège. Although they met armed resistance on entering Senlis — about twenty-five miles north of Paris — the Germans destroyed only two streets, and spared the rest of the city, including its beautiful cathedral. A few days before, they had entered the town of Pierrefonds — famous for its great feudal castle, the finest in existence — and nothing was touched or removed. They then advanced farther west, as far as Chantilly, with its great Palace of the Bourbons, containing art-treasures and an extensive library of immense value. Here, too, not a thing was injured or taken away, prior to their retirement eastward, toward Soissons. It is fervently hoped that should German troops conclude to march again on Paris they will not find it necessary to injure any important structure, and that among the architectural treasures saved to France, after the war, will be Château Pierrefonds — built in 1390, and restored to its original magnificence by Viollet-le-Duc in 1865. See page 106. No data.

The U. S. S. Nevada, pictured on page 111, is one of the war-craft of which Uncle Sam has every reason to be proud. May she fulfil the hopes of her builders and the American nation — in time of need! The Nevada is the first oil-burning battleship of the U. S. Navy — 29,500 tons; 10 14-inch guns; speed, 21 knots, as demonstrated at Rockland, Me., November 3, 1915. The picture is due to the skill of G. W. Lord, official photographer of the Fore River Shipbuilding Corporation, Quincy, Mass., which constructed this powerful dreadnought. Data: November 3, 1915, 2 P.M.; dull and rainy; 5 x 7 Reflex; $10\frac{3}{4}$-inch Euryplan; stop, F/8; $\frac{1}{330}$ second; $\frac{3}{8}$ inch in curtain of focal-plane shutter; Wellington Extreme; Edinol; 5 x 7 Cyko print.

Since its completion, about a year ago, the Custom-house tower of Boston has been photographed from every angle and amid various conditions of time and weather. Most of these pictures were made by camerists from below, and with equipments devoid of swing-backs. Consequently the buildings that surround this chambered column were more or less out of plumb. This was regrettable, because many an otherwise satisfactory effort, with effective illumination or a striking cloud-effect, was offered in vain to PHOTO-ERA for publication. Mr. King, however, wisely took his snapshot of the tower at a respectful distance, and thus avoided the difficulty experienced by others. The setting is appropriate and successful. Data: April, noon; 4 x 5 Ensign Popular; 6-inch Goerz; $\frac{1}{25}$ second; full sunlight; Wellington A. S.; M. Q.

The imposing mountain-view, page 113, is characteristic of the scenery in Southern California. The snow-covered monarch is Mt. Baldy, near Los Angeles; elevation, 10,080 feet. In admiring the spectacular beauty of the picture, one cannot but wish that the foreground — a rocky river-bed — were less conspicuous. It then would have simplified the composition and centered the interest on the mountain. As was to be expected, the use of a color-screen, darker than necessary, produced a visible degree of overcorrection, which, in this case, seems to help rather than to mar the general effect. Data: June, 1915, forenoon; medium sunlight; 5 x 7 Century Grand; Plastigmat; 15-time color-screen; Cramer Portrait Iso; hydro-metol; Cyko Soft Studio print. The author, Mr. Wright, is a professional photographer of Claremont, Cal.

Among the most picturesque and profitable camera-subjects in a large city are the quarters of the poor, generally termed the Ghetto. The American Metropolis has such a section, which is the mecca of artists and writers, and was treated very ably, with pen and pictures, by Allen E. Churchill, in PHOTO-ERA for October, 1914. The composition — for it is a composition, and not a lucky snapshot — by Harry Coutant, page 114, is well ordered, typical and engrossing. Mr. Coutant is a professional practitioner of many-sided ability — an all-around expert. Data: December, noon; Graflex 4 x 5, the first one made; $6\frac{3}{8}$-inch B. & L., 7A, at full aperture; snowing; $\frac{1}{25}$ second.

The young woman examining a pitcher, page 115, is a happy change from the threadbare diversion of a woman gazing vacuously at a crystal-ball. The values of the face, hand and pitcher are well rendered, and the element of pictorial unity is forcibly expressed. Data: Miss Man's professional studio, Minneapolis; 14-inch Darlot Rap. Hem., at full opening; 8 x 10 Cramer; pyro; 7 x $9\frac{1}{2}$ print on Cyko Buff.

When leaving the city of Pallanza, on Lago Maggiore — on his visit to the Italian lakes, several years ago — to make pictures of the Borromean Islands, across the lake, the Editor took a snapshot from the stern of the little row-boat. Page 119. Trimmed, as was the original print, to yield the form of a head- or tail-piece, the result gives the appearance of a wide-angle view. Data: November, 9 A.M.; sun; 5 x 7 Folding Kodak; Voigtländer & Sohn's $7\frac{7}{8}$-inch Collinear; F/11; Eastman N. C. film; $\frac{1}{50}$ second; pyro; 5 x 7 Solio print.

The study in the nude, page 109, is one of the many that comprise the Aurora Life-Studies approved and sold by the Publisher of PHOTO-ERA. They have been fully described in the December issue, and artists and critics have accorded them high praise for the refined beauty and artistic poses of the model. Data: Ordinary room; horizontal window, 6 x 9 feet, facing northwest; sheet as reflector; about 11.30 A.M.; 8 x 10 camera; 12-inch Wollensak lens; 3 seconds; Stanley plate; pyro; 8 x 10 Azo double weight.

The winter-view, page 122, is typical of the mountain-regions of the Pacific Coast, presumably in the state of Washington. It represents, too, the selective artistic skill of A. H. Barnes, whose work in many respects resembles that of H. R. Ballance, the distinguished Swiss photographer. Those of PHOTO-ERA's subscribers who are not familiar with the camera-work of Mr. Barnes are referred to his superbly illustrated article, "Up the Monarch of the Cascade Range with a Camera," in PHOTO-ERA for September, 1914.

Of a different character, yet delightful in interest and charm, is the manner of Forman Hanna, of Globe, Ariz. His prize-picture of a log-cabin in the wintry woods — published in PHOTO-ERA for April, 1915 — is pleasantly remembered by our readers. The same melting quality of delineation and happy disposition of masses is seen in "Evening-Shadows," page 123. Data: February, 1915; bright sunlight; 3A Kodak; $6\frac{1}{2}$-inch Goerz Dagor; stop, F/16; Goerz color-screen; 8 seconds; Kodak film; tank, pyro; enlarged on Standard Bromide C through two thicknesses of chiffon over lens.

H. L. Bradley's supply of characteristic scenes in the region of Mt. Desert seems unfailing. Now and then he favors the Editor with a number of picturesque bits of that interesting locality similar to the one on page 125. Despite an emphatically rendered foreground, not far from the docks and the town beyond, there is a sense of unity, because of the obvious relationship between the separated sections of the picture, aided very materially by the tonal value of the water. This unconventional form of composition will repay analysis. Data: February, 2 P.M.; cloudy; $\frac{1}{50}$ second; 8 x 10 Universal Camera; 12-inch Goerz; stop, F/8; Cramer Iso; pyro-soda; 8 x 10 Prof. Cyko print.

The versatility of Katherine Bingham as a creative artist is a source of wonder to many of PHOTO-ERA's readers. To me her most admirable traits are the nobility and chasteness of her pictorial conceptions and the refined beauty of their expression. To this class of lofty performances belong her "Nativity" (December number of 1914), "A Christmas-Dream" (December number of 1915), and, most particularly, "An Easter-Triptych," page 130, current issue. The elevated character of this group of maidens is manifest, and heightened by the harmonious architectural setting, a design in perpendicular gothic, due to the rare skill of Horace J. Phipps & Company, makers of memorial windows, Boston, U. S. A.

The complete picture serves as a suggestion to those workers interested to enter the April competition, the subject being a design for a PHOTO-ERA cover. See Miss Bingham's hints for this motive, page 129. The original design received from our Guild editor consisted of the three prints pasted in a pyramidical group upon a piece of white cardboard; no ornamentation whatever. The idea of adding a decorative design was an afterthought of the editors. The work was entrusted, with *carte blanche*, to a Boston firm employing a number of capable designers, with the result as shown on page 130, although so elaborate a treatment was not originally contemplated.

Even if devoid of human or animal life, Mr. Davis's street-scene, page 133, is a worthy effort. It is apparent that the weather was hardly conducive to a promenade, and the camerist could not have been expected to linger about until a wayfarer made his appearance. The effect produced by whirling and drifting snow has been expressed admirably, and the atmospheric perspective also contributes materially to the pictorial result. For all that, one would like to ask Mr. Davis if he is wholly satisfied with the conspicuous presence of the tree in the middle-distance; and whether the house at the right does not extend a bit too far into the picture? Data: Taken in a thick snowstorm early last April; looking west at 5.15 P.M.; Ilex lens in Universal shutter of same make; stop, F/6.3; $\frac{1}{25}$ second; Roebuck Double-Coated plate, $3\frac{1}{4}$ x $4\frac{1}{4}$; 8 x 10 enlargement on Velours Black Rough.

The Photo-Era Monthly Competition

WHEN the contest "Winter Street-Scenes" was announced, it was hoped that commonplace subjects would be ignored in favor of unusual ones, or, at least, motives that had not been cheapened by photographic repetition. The jury looked in vain for such familiar sights as the tramp trudging wearily along; a group of street-gamins snow-balling a recalcitrant pedestrian; newsboy struggling to keep his stock of papers from being snowed on; men shoveling a path; instead of which there were pictures of animated streets, deserted streets or parks, the usual cabby-horse quietly braving the wintry element (the picture a very careless snapshot), pedestrians with umbrellas up and the like. The trouble probably is that when camerists make up their minds to make pictures just as it happens to suit them, they may not find the right kind of subjects; whereas their camera should be a *vade mecum* of the pocket-size type. "*Semper paratus*" should be their motto. I know some amateurs who keep in their office an umbrella, a pair of rubbers and a hand-camera, and a duplicate set at home, so as to be prepared for any emergency.

Mr. Bradford's "impression" is above the average of the familiar street-scene during a snowstorm in the city. Here is a successful attempt to avoid the indiscriminate running-about of pedestrians; they at least go in one direction, "making," as our artist would say, "for a high-speed lunch-counter." The composition is logically treated, and there is sufficient variety and suggestion to make his picture well worth studying. Data: March, 1915, 11 A.M.; gray day; Watch-Pocket Carbine, $2\frac{1}{4}$ x $2\frac{1}{4}$; Zeiss Triotar lens; stop, F/6.3; Eastman film; pyro in film-tank; enlarged on $5\frac{1}{2}$ x 7 Instanto Matte.

The Beginners' Competition

THE sense of largeness expressed in Mr. Rudolph's picture, page 136, impresses one before another quality. The most distant tree helps to prevent the possibility of sameness in the design, owing to the large space between the pair of sturdy oaks, which, however, is judiciously occupied by long, flat shadows and an attractive background, the entire distance being well graduated.

(*Continued on page 148*)

ON THE GROUND-GLASS

WILFRED A. FRENCH

The Significance of Proper Names

In looking over the subscriptions and renewals to Photo-Era recently, the Editor was struck by the large number, as well as the direct significance, of names of Teutonic origin as compared with those of English origin. There are, for instance, many names that are curious to us, though not so to the German people, such as Hundertmark, Dotterweich. There are also such familiar cognomens as Krieg (war), Fried (peace), Krieger (warrior), Friedmann (man of peace), Ries (giant), Schmerz (pain), Muth (courage), Hau (stroke), Wilhelm, Kaiser, Prinz (prince), Kuehn (bold), Schreck (horror), which, oddly enough, are suggestive of the European war; while the combination of the names Schwarz (black), Weiss (white) and Roth (red) represents the colors of the German national flag. Of a less stern aspect are names which are also eminent in music; viz., Mozart, Weber, Bach, Haendel, Schubert, Schumann, Mendelssohn, Wagner, Rossini, Verdi, Auber, Thomas — all subscribers to Photo-Era.

Why Goods are Sent by Express

To originate practical ideas and to have them deliberately appropriated by other publishers, without a word of credit, is provoking. But when these pirates criticize an obviously common and sensible practice, well — it is either a case of cerebral paralysis or premature senility. It is the Publisher's invariable custom to forward valuable books or photographs by express. Why? To ensure prompt and safe delivery, and, in case of injury or loss, indemnity from the express company.

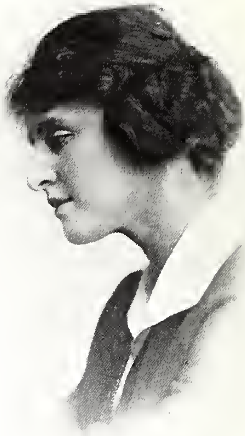
The Photographic Game

The business-street nearest the residential section in Boston, U. S. A., is Boylston Street. It contains the largest number of high-class studios of any street in the Hub. One of these is conducted by Charles A. Hoyle, who, while somewhat conservative in his methods, can boast a successful, prosperous business. One of his Boylston Street competitors is noted for not being specially fastidious about the way he gets orders. Sometimes he throws propriety to the winds, with the result that new customers are known to have taken offense and forsaken him. In mentioning such an incident to Mr. Hoyle recently, the Editor asked him what he thought of it. Shrugging his shoulders, he replied, "All I care to say is, it 's not according to Hoyle."

Sightless Eyes in Profiles

As I was looking through a theater-program, during the intermission, recently, I noticed a group of portraits of the leading women in the cast. They were mostly profiles, and the eyes reminded me vividly of the sightless ones of Helen Keller. The pupils, here, were scarcely visible, robbing the portraits of all animation. This was specially true of the profile of the heroine in the play, enacted by Marie Leonhard, a superbly accomplished artist, with large, dark orbs that flashed and sparkled in moments of strong emotion.

An inquiry showed that the photographer of this particular portrait was a professional and, further, that the posing had been done by a former amateur. This proved that I had not erred in charging the average amateur portraitist with not knowing how to manage the eyes in portraiture. I explained the matter in the September "Ground-Glass." Another paragraph, "The Profile at Its Best," will appear in the next issue. The subject has been much neglected by the photographers.



A FAULTY PROFILE

Colonial Architecture

One of the young architects who delivers a lecture on modern architecture in the series of free public-school lectures had just shown his audience the beauties of the Cologne Cathedral the other evening when he thought of an experience he once had on a similar occasion. "It was at the conclusion of my lecture," he told his audience, "that a woman came to me, explained that she, too, was a student of architecture, and thanked me for enlightening her on one point that she had never been able to understand before. 'I 've always wondered,' she said to me, 'where the Colonial style of architecture came from. Now, of course, I see that it comes from Cologne.'"

"What did you tell her?" asked some one in the audience.

"I told her," replied the speaker, "that if my lecture had made that clear to her, I felt very much gratified."

Exchange.

EVENTS OF THE MONTH

Announcements and Reports of Club and Association Meetings, Exhibitions and Conventions are solicited for publication

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Photographic Dealers' Association of America

Cleveland, March 7, 8, 9

Strangely enough, the fourth annual convention is to be held in the same city chosen by the professional photographers for their meeting in midsummer. Being so centrally located, however, it gives dealers throughout the country a better opportunity than ever before to attend. As the Second Exposition of Photographic Arts and Materials will be held in Cleveland coincident with the convention, no progressive dealer can well afford to stay away.

A profitable and pleasurable program is being worked out by the various committees. This includes meetings at the Hotel Statler every morning from 9 to 12, at which important papers will be read upon business-conditions in various sections of the country, good methods for the successful conduct of a photo-supply store, daily experiences, advertising and many other subjects worthy of discussion, and an exchange of ideas and personal experiences.

Special attention will be given to the display-window. Members are encouraged to send lantern-slides of their best window-arrangements, which will be thrown on the screen before the convention and a vote taken. A prize of $25 in gold is offered to the winner.

Each morning-session will conclude with a luncheon, at which a speaker, well known to the trade, will make an address. Afternoons will be devoted to the manufacturers' exhibits. Wednesday evening there will be a theater-party for members and ladies, and Thursday evening the annual banquet will occur, followed by an informal dance.

There will be no extras at this convention. The membership-fee of $5 includes everything. Send this without delay to Photographic Dealers' Association of America, 241 Engineers' Building, Cleveland, Ohio. Dealers may obtain extra tickets for the luncheons, theater-party, banquet and dance for their representatives and ladies at actual cost.

Salmon Goes to Europe

Mr. W. H. Salmon, manager of the Minneapolis branch of the Defender Photo-Supply Company, sailed for Europe January 26 in connection with the Defender interests.

Belated Announcements

Secretaries of camera-clubs and managers of photo-exhibitions, in sending out their announcements to the photo-press, do not realize that they frequently do not reach the monthly publications until after they have gone to press, and, if before, would be printed days, if not weeks, after the close of the events. In order to have such announcements appear in an issue to benefit those who may desire to attend the exhibition or participate in it, they should be sent to the photo-publishers *before they are sent to the printer.* Three typewritten copies, each in triplicate, will suffice for the nine photo-publishers. Chicago, Philadelphia, Toronto, please take notice!

Photographers' Association of America

Cleveland, July 24 to 29

It has been decided by the Executive Committee to hold the national convention during the week of July 24. Plans for the event are well under way, and the prospects are that it will prove to be of memorable character.

The Cleveland Chamber of Commerce has offered, free of charge, the Wigmore Coliseum, the largest hall ever placed at the disposal of the association, and providing several distinct advantages over any other that could be obtained. It is located within a block of the Headquarters Hotel — the Statler — and as everything will be on one floor, under a north light, the situation could hardly be more auspicious for the intensive sort of convention which President Dozer is planning, with "business-getting and business-holding ideas" as its keynote.

While the primary object of the program will be to show photographers how to make more money out of their business, the art-side will by no means be neglected. Competent lecturers and demonstrators will give instruction in the many ways to raise the artistic quality of professional work, and a special effort will be made to increase the benefits of the picture-exhibit. The judges will give ratings as in the past, with reasons for them. Up to twenty pictures will be selected for salon-honors accompanied by a certificate of merit.

Both the Commercial and Women's Federations will be represented by important features on the program, and the attendance in these departments is expected to be unusually large because of the central location.

Exceptional entertainment-features are being arranged, which will keep the week full of pleasure. Monday evening will be devoted to an informal reception and dance in the ball-room of the Hotel Statler. Friday will be given up to a trip — one way by boat — to Cedar-Point, the Atlantic City of the Middle West. This will be called Ohio-Michigan day, in honor of the local photographers' association, which plans to hold its annual meeting some time during that day.

Photographic Paper Now Made in America

It is reported that a paper-manufacturing firm expects soon to complete the work of developing the full output of the springs at Menasha, Wis., which are largely responsible for the purity of the firm's product during the last year or so. This report will doubtless prove of great interest to photographic manufacturers who, previous to the war, obtained most of their paper for coating from Germany. Upon the outbreak of hostilities every pound of this paper obtainable was contracted for, and it is stated that with normal consumption the supply cannot last very much longer.

The Photographic Times Discontinued

W. I. Lincoln Adams's *Photographic Times* was consolidated with *Popular Photography* beginning with the January issue, 1916. This should prove a move in the desired direction of fewer and better magazines.

Another Method to Exhibit Color-Photographs

Since my article on another page of this issue was put in type, Mr. Alfred Holmes Lewis, of Congers, New York, has very kindly supplied me with a description of a method which he has successfully used for the exhibition of color-photographs on glass. His device consists of a large cabinet, six feet six inches long and two feet seven inches wide on the bottom, with sloping sides. The height is approximately fourteen inches. The interior of the cabinet is illuminated by four 100-watt Mazda lamps, and the pictures are viewed in the openings on the sides and ends of the cabinet. Sixteen pictures, six on each side and two on each end, are held in frames made after the fashion of kits, which fit into rabbeted openings in the frame-work of the cabinet. Mr. Lewis used ground-glass of a very fine grain behind the autochrome pictures. The construction is of whitewood and composition board.

The cabinet is made in two sections, which are placed end to end on a large table for exhibition. For additional convenience in transporting and storing, the sides and ends are hinged at the top and bottom in such a way as to fold compactly.

This cabinet has the advantage of durability and stability without great bulk or weight. It is more expensive to make than the cabinet mentioned in my article, but for persons who are likely to exhibit frequently, it would be desirable to have it as substantially constructed as this. H. F. Perkins.

L. L. Higgason's New Studio

Those workers who are ambitious to enter the professional field will doubtless remember the beautiful work of L. L. Higgason, of Asheville, N. C., who was really "discovered" by Photo-Era about a year ago. He made his initial appearance in Photo-Era with a magnificent head of a young girl, which was used as a cover-design and a full-page illustration for July, 1915, Photo-Era. The picture excited admiration at the Photographers' Convention in Indianapolis, last year, and may be regarded as the beginning of Mr. Higgason's national reputation. Since then he has been honored in various other ways, and the prestige thus acquired induced him to retire from the firm of Pelton & Higgason and set up a studio for himself. Mr. Higgason possesses signal artistic ability and striking originality in portrait-work, and there is no doubt that he will carve a name for himself on the tablet of American photographic history. He has our best wishes.

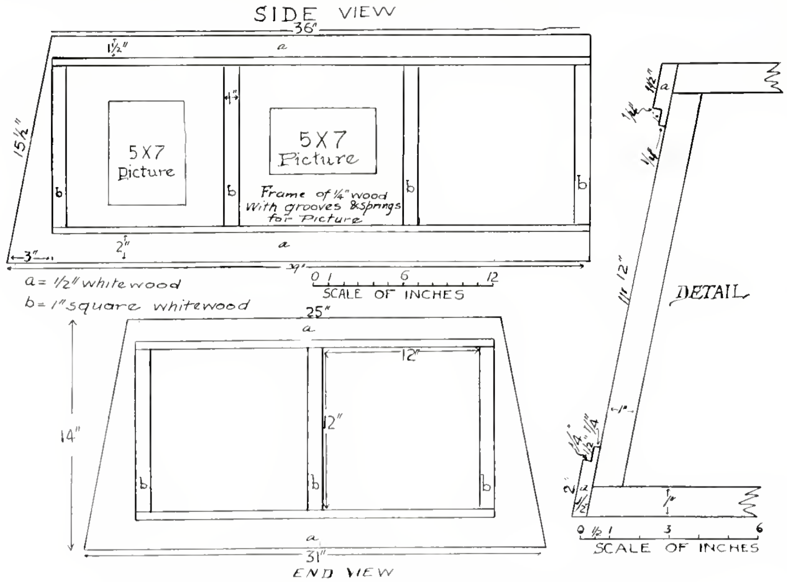
The Nude in Photography

This delicate subject has been agitated and discussed, pro and con, in the photographic press so frequently — though not always intelligently — that it may be well to let it rest until the public can regard the question of the nude in art in the right light.

Certain it is, however, that mere realistic camera-records of nudity have little in common with artistic interpretations of the undraped human figure, be they the product of brush or camera. First of all, a representation of the nude owes its origin to a purely artistic impulse, free of unworthy motives. Then the medium of expression must be efficient and flexible, and directed by a skilled and sympathetic artist. Photo-Era has occasionally published nudes — by Garo, Sipprell, Abbott, Doty and Cutting, for example — that have been considered admirable by qualified judges and, at the same time, suitably restrained for the present state of the public mind. As it might be unwise to invite camerists in general to take up photography of the nude, there certainly is no harm for us to suggest that they analyze beautiful examples of such work, especially when executed by the artists we have named, and to join a life-class and draw from living models under the direction of an able instructor.

An admirable substitute, of which many art-students are availing themselves — because convenient and inexpensive — is a set of Aurora Life-Studies, which exemplify in an eminently pleasing degree the possibilities in this branch of art-photography. The studies from living models, advertised in Photo-Era, represent principally one female model of uncommon physical and facial beauty — nude or partly draped, and in poses that are artistically expressive and refined. The technical excellence of these subjects by a skilled artist-photographer is of the highest order. No models of men or children.

There are three sets, A, C and O, each composed of twenty 5 x 7 prints, and seven sets, B, D, E, F, G, H and I, each composed of twelve 8 x 10 prints, made on Double-Weight Azo Paper. The price for any set, of either size, is $5.00, sent, express paid, by the Publisher of Photo-Era, 383 Boylston Street, Boston, Mass., on receipt of money-order; cheque, 10 cents extra. No sets or prints sent for examination or exchanged.



MR. LEWIS'S DISPLAY-CABINET FOR COLOR-PHOTOGRAPHS

LONDON LETTER

CARINE AND WILL A. CADBY

Since the last writing a most comprehensive kinematograph show has been staged at the Empire Theater (Leicester Square). It is called "Britain Prepared," and is a grand review of the activities of our naval, military and munitions forces. The show has not only been sanctioned by the powers that be, but every help possible has also been given in the matter of getting the photographs. Indeed, it is the official representation of the warlike activities now proceeding.

Mr. Balfour, our First Lord of the Admiralty, made a speech at the opening performance, and it was to a certain extent a photographic speech. He pointed out that as present-day military warfare did not lend itself to photography, the films represented the armies mostly at their training for the real thing, and he went on to say, "It is, unfortunately, impossible, even for the most modern form of photographic art, to represent to us the great battles which have actually taken place. . . . But the portion of the Grand Fleet which you are about to see is actually engaged in the great operation of war. On it, as you will see it represented to the life, depends the whole of the operations carried out by the Allies, from Archangel in the north far around to the Persian Gulf."

The photographs were taken by Messrs. Vickers, Kinemacolor, Jury, Gaumont and Kineto, and the variety of subjects treated is enormous, ranging from battleships in typical North Sea weather to the making of the soldiers' daily bread. The spectator is given a good number of glimpses of work at the Vickers factories, and we see the manufacture of shrapnel shell (much of it done by women) from the chrysalis stage of rough steel rod to its actual delivery in armoured lorries, almost at the fighting-line.

But the pictures that interest the British public most of all are the naval scenes, a large number of which had been made from the deck of the new dreadnought "Queen Elizabeth," or "Big Lizzie," as she has been nicknamed. These gave one the idea that a spacious ship's deck is a splendid setting for a cinema show. One just sat and watched the various work on board being carried on, and probably, owing to the discipline to which the navy men are accustomed, none of the "actors" turned knowing glances towards the camera, or, in other words, played to the gallery. This, artistically, was a great improvement on the ordinary cinema exhibitions, and one forgot the photographic machinery through the naturalness and reality of the things shown.

A good many of the sea-scenes were in color (Kinemacolor), which showed up the very beautiful but stormy skies, under which one beheld big ships dipping their noses into even bigger seas, truly a marvelously faithful representation of naval life in the North Sea.

As portrait-photographers we could not help studying the faces of the crowded audience. The people were not out for amusement, as is usually the case at a cinema show, but for information, and tense interest and not relaxation was the prevailing note.

Much flashlight-powder must have been used on the night of the last recruiting-day under Lord Derby's scheme; for the papers are filled with photographs taken just before midnight, showing the last batch of recruits being sworn in various parts of the country, with the hands of the clock nearing midnight. The Kingsway (London) recruiting-office was so congested that Messrs. Kodak came to the rescue, and threw open their splendid offices and hall for the overflow, and the business of attesting went on there far into the night.

Miss Gertrude Bacon, daughter of the celebrated balloonist, has been lecturing on the photography of the earth from balloons. Miss Bacon made many ascents with her late father, and is well qualified to speak on the subject. She showed some remarkable slides from snapshots of Central London taken at a height of 3,000 feet. But the most interesting part of her lecture related to photographs she had taken of London at night, not from balloons, but elevated positions. One presents a view of the busiest part of Oxford Street. The plate was exposed from 6 P.M. to midnight, and the result is an excellent photograph of the permanent features of the street. Only one figure can be recognized in the picture, and he, of course, is a policeman, and we suppose he must be included amongst "the permanent features of the street"!

The best of all is a photograph taken from the "ball-room" (the room just below the ball) of St. Paul's Cathedral. An exposure of three hours yielded a negative that, owing to the brightness of the night-lights of London at that time, made the outlines of the Houses of Parliament — right away at Westminster — clearly visible.

The latest move of the Snapshots From Home League is the issuing of a little monthly magazine called *Snapshots*, which is described on the cover as "A Monthly Record of the Progress of the Snapshots From Home Movement." It is edited by Mr. Thorn, to whom most of the league's activities are due. He contributes an encouraging introduction, and there is also a very sensible and practical little article called "Difficulties."

That the League is a success is a triumph for its organizers. At a time like this, persuading people to photograph, even in such a good cause, is exceedingly uphill work. There are few of us left, nowadays, without some definite "job." Our men of all classes have been gradually absorbed into the Army, and many of us who used to have time for photography have to replace the manual workers, and leisure is a luxury we can hope to enjoy only when the war is once over. The time of year, too, is not in favor of the movement, for it needs a good lens to attempt a snapshot in London in January, and not every amateur possesses a tripod.

The Camera Club in London is holding one of its most interesting shows, namely, its Exhibition of Photographs by Members of the Club. Keen's sketches which were on view there last month were entertaining and amusing, but what really interests us most is to see what photography is doing. Not that one expects great things from this depleted coterie, with so many of its members in active service, but there is something decidedly stimulating in the pluck of the members to carry on and get a collection of work together. In this "close" time for photography, when there is so little evidence of it about, it is most interesting to see this demonstration of what has actually been produced. There are some well-known names among the exhibitors: Mortimer, Ward Muir, Bertram Park, Walter Thomas, Warburg, Emanuel, Macfarlane Cox, Judge, and on the whole the show seemed even better than last year. Evidently the Club means to hold its own and maintain its photographic interest till times are better.

The Platinotype Company has raised the price of developing- and clearing-salts for both Platinotype and Satista papers to 2/– the ½-lb. tube, owing to the big rise in the cost of chemicals. They have applied to the Government for a permit to continue the use of platinum for coating papers, but there seems some uncertainty as to the amount of platinum available for other than Government requirements; and the probability is that workers will forsake Platinotype and use Satista (the image in which is only partly platinum), as the results are almost identical, and Satista prints in a third of the time and is lower in price.

The Temple of Childhood Wins

Although the suit of the International Child-Exhibit Company against the Panama-Pacific Exposition Company for $155,000 for alleged breach of contract resulted in a disagreement of the jury, the final ballot being eight to four in favor of the plaintiff, an agreement has been reached out of court and the suit withdrawn. Although no announcement of the terms of settlement has been made, it is reported that the Exposition Company paid damages amounting to $25,000, which is accepted in many quarters as a vindication of the Temple of Childhood management.

The 1915 Kodak Advertising-Contest

The prizes as announced were awarded as follows:

Class I.
First Prize: W. B. Stage, New York.
Second Prize: Geo. J. Botto, New York.
Class II.
First Prize: H. V. Roberts, Utica, N. Y.
Second Prize: W. B. Stage, New York.
Class III.
First Prize: John Baldridge, Waldron, Mich.
Second Prize: Jas. J. Ryan, Berkeley, R. I.
Class IV.
First Prize: Julius Schabtach, Buffalo, N. Y.

Print-Exhibition at Haddonfield, N. J.

The Men's League of the First Presbyterian Church of this town has found in the camera-activities of its members a useful adjunct to the more serious work being attempted. The third annual exhibition of photographs is to be held March 7, on which night Mr. Wm. H. Rau, of Philadelphia, will deliver his illustrated lecture "Through Switzerland with a Camera."

Ozobrome Materials

In view of the numerous inquiries for Ozobrome materials, which have not been carried by photo-dealers in this country for several years past, because the Ozobrome process was not practised sufficiently to warrant further importations, we can only refer interested workers to the makers, viz., Thomas Illingworth & Co., Ltd., Willesden Junction, London, N. W., England.

Miss Loehr Becomes an Instructor

Miss Pearl Grace Loehr, a past-president of the Women's Federation of the Photographers' Association of America, who is now operating a studio in New York City, has been honored by appointment as the first instructor of photography in connection with an art-school in this country. The department of photography of the New York School of Fine and Applied Arts is an entirely new venture, which promises to be highly successful.

Our Illustrations

(*Continued from page 143*)

Excellent values. Data: Early October, 7 p.m.; hazy light; 7-inch Euryplan Anastigmat, F/4.5; stop, F/11; ½ second; Stanley; hydro-metol; part of negative enlarged to 11 x 14 on P.M.C. Bromide, No. 8.

The general pictorial effect of "Evening Reflections," page 137, is very pleasing. The proportions are good, and the part of the reflected sky that takes the place of a foreground deserves recognition. Data: December 12, 1915, at sunset, 4 p.m.; 3¼ x 4¼ Multi-speed Camera; Euryplan Va; 4¾-inch focus; stop, F/11; ½ second; Standard Orthonon plate; pyro; part of negative enlarged on Eastman Standard Bromide C.

The picture by C. Ulrich, Jr., page 138, represents a phase of child-life in Holland, evidence that the dove of peace is still hovering over that brave little country. This happy domestic scene speaks louder than words, and is a welcome sunbeam in the obscured landscape of war-embroiled Europe. The print was sent by a subscriber from Rotterdam specially to the Round Robin Guild contest, and there is no doubt that the reproduction will be appreciated by every sympathetic reader of Photo-Era. Data: July, 9 a.m.; 5-inch Cooke lens, F/4.5; stop, F/5.6; ⅕ second; Imperial Orthonon Special Sensitive, 9 x 12 cm.; pyro-soda; enlarged on Wellington Bromide Cream Crayon; sulphide-toned.

The Late Manly W. Tyree

For some reason we did not receive the news of the death of Manly W. Tyree, which occurred Saturday, January 1, of the current year, in time to print it in our February issue. Words cannot express our grief at the loss of a man who was so dear to the hearts of the photographers and a host of friends in the city in which he lived. He was, indeed, a man of many noble and endearing traits, and found it quite easy to make friends in any direction he chose to turn. On account of his many-sided abilities he became president of the Photographers' Association of America in 1914, having attained this honor by gradual steps as officer in the Association. His death occurred at Raleigh, N. C., his home-city, as the result of gastritis. He was in his fortieth year, and with the exception of this, his only serious illness, he had always enjoyed the very best health, being a man of superb physique and fine presence. Mr. Tyree enjoyed great popularity by reason of his splendid traits of heart and mind, and his loss will be deplored sincerely by friends everywhere and, particularly, among the photographic fraternity. He leaves a widow and three children.

The Camera Club, New York

This organization is enjoying a very active and successful season. Every Tuesday evening, which is the regular Club night, entertainments have been given. In addition to photographic and musical offerings the Club has had lectures by the following eminent artists: Henry W. Ranger, Elliot Dangerfield, J. William Fosdick and George Bogart. Exhibitions have been going on every month, and up to the present time the list includes the honored names of Pirie MacDonald, Dudley Hoyt, Henry Wolf, and pictures by a fellow-member, Eduard Steichen. Later in the season there will be interchange exhibits and also a gold-prize competition for "Regular and Fake" pictures which is open only to members. Photographers, either professional or amateur, visiting New York City will be most cordially welcomed at The Camera Club.

BOOK-REVIEWS

Books reviewed in this magazine, or any others our readers may desire, will be furnished by us at the lowest market-prices. Send for our list of approved books.

Deutscher Photographen-Kalendar and Almanach. Pocket-edition. Edited by Karl Schwier. 35th year. Price, in Germany, 2 marks (48 cents). Weimar, Germany: Karl Schwier & Co.

As if universal peace were prevailing in the world, the veteran publisher of the *Deutsche Photographen-Zeitung*, Karl Schwier, calmly issues his popular annual, the German Photographers' Calendar, in handy pocket-size, for the current year — the best edition yet. It is again filled with valuable, timely recipes, new and standard methods, tables, data, for the active, practical worker, and the consumer of plates, printing-papers and chemicals. All this diversified information has been carefully selected, arranged and edited. The book is printed in roman type, and, therefore, available alike to German and non-German readers.

Photograms of the Year 1915. The Annual Review of the World's Pictorial Photographic Work. Edited by F. J. Mortimer, F.R.P.S. Price, paper-covers, $1.25; postage extra. London: Hazell, Watson & Viney, Ltd.; New York: Tennant & Ward, 103 Park Avenue, American agents.

Despite what appears to us in America as indifference to a calamitous situation, the editor of *Photograms* and his collaborators have produced an issue of the always eagerly anticipated annual, *Photograms of the Year*, which, for pictorial and literary excellence, merits unstinted praise. There is the usual number (ninety-five) of admirable halftones, and the selection is internationally representative, including the United States at its best, though obvious obstacles account for the absence of contributions from the continental belligerent countries, except France and Italy. Among the plates that are conspicuous for originality and pictorial appeal are: "Laughing Girl" (head), Willem Roemer, Jr., Rotterdam; "The Harbor, Evening," Ture Sellman, Sweden; "Anna Larsson," Julius Falkman, Denmark; "Pour nos Soldats," Dr. S. Bricarelli, Italy; "Summer Landscape," J. Williams, Australia; "Lady in Black," H. Mortimer-Lamb, Canada; "Behind the Scenes," Robert Demachy, France; "Curling at Kandersteg," Ward Muir; "Mrs. Nagelmackers," Malcolm Arbuthnot; "Amsterdam," J. H. Anderson; "The Porches of Rheims in 1899," E. H. Evans; "The Birth of a Battleship," F. J. Mortimer; "The Canal, Bruges," Charles Job; "Leopold and Lena Pilichowski" (group-portrait), Furley Lewis; "In Old Dinan," Stella Malcolm; "The Stilly Night," J. M. Whitehead; "The Doll's Day," Will and Carine Cadby; "The Raider" (aeroplane), Melville Mackay; "The Rt. Hon. H. H. Asquith," Prime Minister (frontispiece), Walter Adams; "Street in Toledo," J. Craig Annan; "Ducks," W. Thomas; "Mademoiselle Sans-Gêne," John R. Brinkley; "The Hillside," A. R. F. Evershed; "A Study" (little nude girl), Bertram Park; "The Jolly Tomboy" (little laughing girl), Marcus Adams; "Sand-Dunes," I. J. Chorley; "The Cedar-Branch," Basil Schoen; "Miscio Itow" (Japanese dancer), A. L. Coburn; "Katrina Blakowska," Hugo van Wadenoyen, Jr.; "The Casket" (semi-nude), Angus Basil; "A Welsh Girl," Hugh Cecil; "Mountain-Sheep," J. B. B. Wellington; "In the Land of the Pharaohs," Donald McLeish. Pictures by Americans are: "Bacio della Luna," Williamina Parrish; "The Adventuress," W. H. Porterfield; "Storm-Twisted," H. C. Mann; "Nude with Black Shawl," E. H. Weston; "Italian Court" (San Francisco Exposition), James N. Doolittle; "The Crescent," W. H. Rabe; "Portrait of a Dog," Francesca Bostwick.

The text is particularly good, including an analysis of the illustrations by F. C. Tilney, and reviews of the year's work by F. J. Mortimer; H. Mortimer-Lamb for Canada; Walter Burke for Australia; W. H. Porterfield for United States; H. Yahagi for Japan; Henry B. Goodwin for Scandinavia; also original papers — "Nature and Art in Photography," by Antony Guest, and "The Vicissitudes of Photography," by W. R. Bland.

W. H. Rabe's Exposition-Prints

Although visitors with small hand-cameras were admitted freely to the Panama-Pacific Exposition, at San Francisco, tripods were excluded, except those used by the official photographer and his assistants. Consequently, camera-users were obliged to use for prolonged exposures any convenient base, such as a box, chair, bench, pedestal or rail. For this reason, most of the architectural subjects taken under these adverse conditions showed linear distortion; but this was corrected in a great measure by judicious trimming.

Even though hampered by the absence of a tripod, W. H. Rabe, one of the most capable and resourceful photo-pictorialists on the Pacific Coast, succeeded in producing a remarkable series of pictures of this memorable exposition. With true artistic instinct he interpreted the extraordinary beauty of those famous scenes when night was changed into dawn, or even into day. In Mr. Rabe's pictures the nobility and charm of the buildings and courts are more convincing than when seen by the light of day.

The prints, fifty in number, tastefully mounted and effectively displayed at Cobb's art-gallery, 454 Boylston Street, Boston, U. S. A., February 14 to 28, were seen by the artists, connoisseurs and art-lovers of Greater Boston, and created a deep impression. The critics unanimously declared Mr. Rabe's collection a revelation of the ingratiating beauty of the fair-buildings, and were profuse in their praise of the artist's technical and interpretative ability.

The National Geographic Magazine

The *National Geographic Magazine*, through whose courtesy the current issue of Photo-Era contains a superb photograph of the famous Château Pierrefonds, is the organ of the National Geographic Society, which has more than 400,000 members, being by far the largest scientific body in the world. The Society was organized in 1888, and has for its object the increase of geographic knowledge and its diffusion among the people. The publication is purely educational and altruistic.

A pamphlet giving the history of the National Geographic Society, and a description of its distinguished organ, has just been prepared for distribution. It also contains a number of full-page plates in colors as specimen-illustrations appearing in the *National Geographic Magazine*. Any one interested may procure a copy of this delightful and instructive pamphlet by simply sending a request to the publishers, the National Geographic Society, Washington, D. C.

WITH THE TRADE

Let Color-Photographers be Patient

In view of the continued interest with which photographers await the day when color-photography on paper will be announced with definiteness, and after occasional periods of activity by unscrupulous inventors and purveyors, the Publisher is glad to state that an American inventor has at last succeeded in evolving a practical camera for color-photography on paper. We are personally familiar with successful demonstrations of the taking-camera and the production of color-prints on paper. The thing has at last been solved in a sane and practical way, and without the necessity to mislead, in any way, the interested amateur.

The Publisher is not at liberty to divulge the character of this new process, on account of certain matters pertaining to the manufacture of the apparatus.

All persons who are eager to take up the matter of photographing objects in colors direct from nature, and to make the prints directly on one sheet of paper — no compromise — which can be pasted in albums if necessary, will do well to curb their enthusiasm and not spend their money for impractical and falsely advertised and misrepresented cameras that are thoroughly useless in the hands even of scientific men.

But in the very near future this new type of camera will be on the market, and may be received with the utmost confidence, as it is so practical and simple to manipulate, and the results so sure, that it will be a pleasure for any dealer to offer it to his patrons, because he can absolutely guarantee satisfactory results by any person of average intelligence. Moreover, the apparatus may be advertised with perfect safety by discriminating publishers, and there will be no need for apologies on the part of the manufacturer, dealer, salesman or the photographic publisher.

This much the Publisher is permitted to state, however, that the camera requires the exposure of three plates, each exposed automatically in quick succession, which the inventor claims is far more dependable than the method that requires a three-plate one-exposure camera. For the present the new camera will require the use of a tripod, as exposures cannot yet be made in less than $\frac{1}{20}$ second.

A Popular Shutter

When in their communications to Photo-Era camera-users voluntarily speak in praise of the Ilex Shutter, particularly the new 00 Acme type, it must be accepted as evidence of positive excellence and efficiency of this popular product. Discriminating workers who are not familiar with the new and admirable features of the latest and improved Ilex shutter should lose no time to get into touch with the makers, the Ilex Shutter Co., 601 Ilex Circle, Rochester, N. Y.

Autochrome Plates in Germany

According to the *Deutsche Photographen-Zeitung*, devotees of color-photography in Germany still have to depend on Lumière Autochrome plates, simply because products from other sources have proved to be worthless. They, therefore, hailed with delight the arrival of a large shipment of fresh Autochrome plates stocked by a well-known photo-dealer in Berlin. Of course it was to be expected that prices had to be double those that prevailed in times of peace; but this circumstance did not deter any one from gratifying the general desire for photographs in natural colors. The Germans know by experience that they cannot rely upon any hand-cameras that profess to turn out photographs on paper. They appreciate a good thing when they see it.

A Beautiful Printing-Medium

The ultimate aim of the photographic practitioner is the print, and the greater its beauty and charm, the greater his satisfaction. In the hands of the discriminating worker, Seltona paper is a source of joy, for it yields prints of unrivaled beauty, clear and abundant detail, combining brilliancy and depth with softness and delicacy. Seltona is a self-toning daylight printing-paper, made in five popular grades, and is sold by its American agent, J. L. Lewis, 522 Sixth Ave., New York.

Imp Gun Photographs Wanted

We are authorized to state that the Imperial Brass Manufacturing Company, of Chicago, U. S. A., is desirous to obtain photographs which demonstrate the best possible results made with the use of its Imp gun, particularly pictures of moving objects, animals, etc. For this reason, the makers of the Imp gun offer to pay for photographs, according to originality and merit. Photographs may be sent by mail or express, fully prepaid, to the office of the Company — 1200 West Harrison Street, Chicago, U. S. A. To ensure consideration, photographs made with the Imp flash-gun should be received no later than April 1, 1916.

Record Plate-Prices to Advance

Marion & Co. announces that owing to the high price and scarcity of materials it will be necessary to raise the wholesale-prices of Record Plates. Despite this fact the American agent, Allison & Hadaway Corp., 235 Fifth Avenue, New York, does not intend to advance the retail-prices on the plates already purchased and in stock. Photographers wishing to procure these splendid plates at current prices should order them at once as the supply is limited. This announcement is in line with the well-known policy of this firm to give its patrons the benefit of the lowest prices.

The Sprague-Hathaway Company Scorched

The fire which occurred at Sprague-Hathaway Company's plant in West Somerville, Mass., on January 16, destroyed one-half of their four-story brick building and virtually ruined the contents of the building, entailing a loss estimated at over $60,000. In ten days' time they have moved into new quarters, equipped the plant with modern apparatus ready for business.

Their new location is only three minutes' walk from their old place of business. We understand that the old building is to be rebuilt on modern plans, and equipped with the latest and best apparatus for doing their special work.

April 1916 15 Cents

Photo-Era

The American Journal of Photography

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To Contributors: Contributions relating to photography in any and all of its branches are solicited and will receive our most careful consideration. While not accepting responsibility for unrequested manuscripts, we will endeavor to return them, if not available, provided return-postage is enclosed. Authors are recommended to retain copies.

To Subscribers: A reminder of expiration will be sent separately at the time the last magazine of every subscription is mailed. Prompt renewal will ensure the uninterrupted receipt of the magazine for the following year. Send both old and new addresses when requesting a change.

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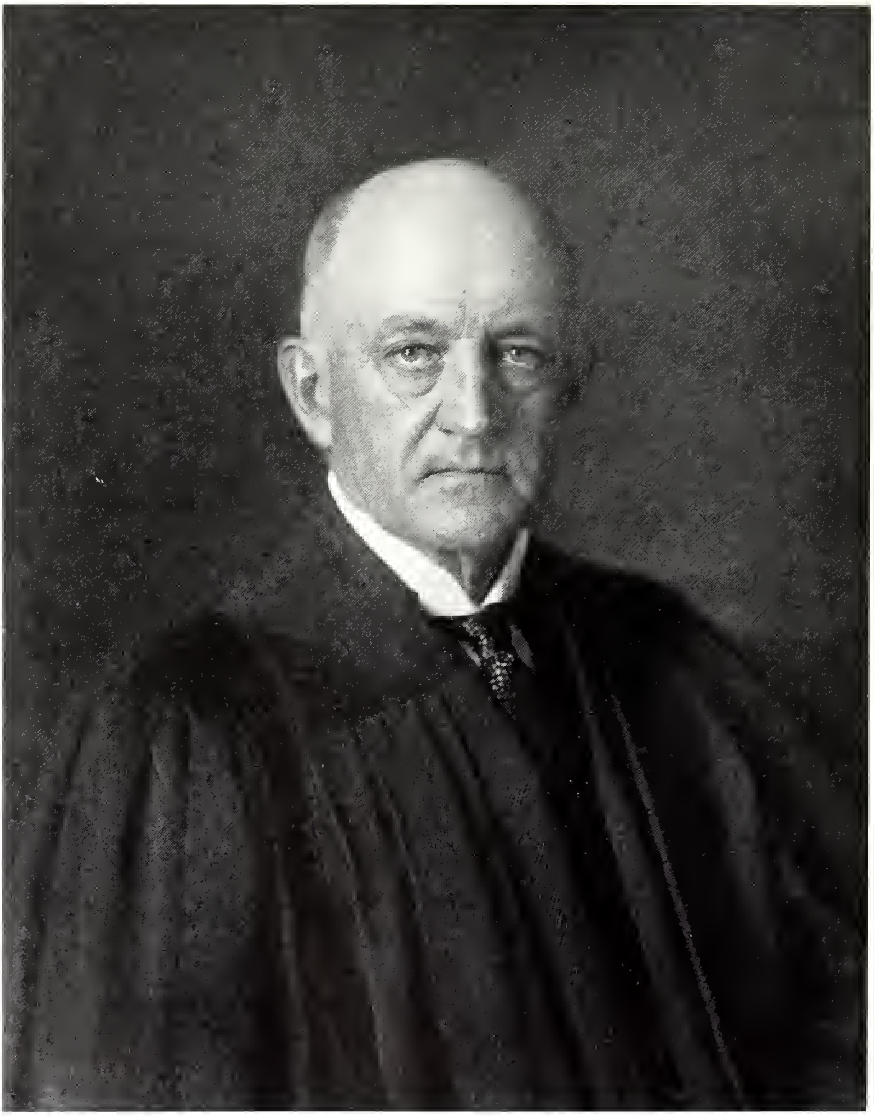

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PHOTO-ERA
The American Journal of Photography

Vol. XXXVI APRIL, 1916 No. 4

Stereo-Photography

L. A. GAREIS

THE most beautiful and interesting branch of photography has but few disciples among our amateurs and professionals. The reasons why our photographers content themselves with substitutes produced by one-eyed cameras in preference to the genuine lifelike reproductions obtainable with a stereoscopic instrument are probably the following: (1) The relatively higher cost of a stereoscopic camera; (2) The necessity of a special instrument in which to view the finished picture; (3) The erroneous belief that it is difficult and troublesome to produce good stereograms.

The first of the above objections can easily be overcome inasmuch as it is only a relative fact. Nowadays we see photographers spend $165 for a fine pocket-camera and twice that amount for a really first-class reflex with two shutters. The finest stereoscopic instrument can be purchased for $168, and very good instruments for about $65. The materials used are not any more expensive than those needed for one-eyed pictures, so that no prospective stereoscopist has to fear a substantial outlay; there are stereo-outfits for any pocketbook!

The necessity of using a special instrument (stereoscope) for viewing-purposes cannot be done away with altogether, it is true; but if one considers that a beautiful stereoscope is an ornament to any parlor, that the viewing of the transparencies or prints can be done in the easiest possible way and that the effect obtained is unapproachable by ordinary photography, no serious worker will object to this; on the contrary, it should induce the lover of the beautiful to indulge in this exquisite art. Although several methods are known to obviate the use of a stereoscope it will be better for the beginner to adhere to normal principles.

Disregarding the complicated methods as not being within the scope of this article the Anaglyphs and the new method of Dr. Hess (March, 1914, Zurich, Switzerland) will be interesting to amateurs. Anaglyphs are pictures reproduced in two complementary colors, green and red, placed side by side or superimposed, viewed through spectacles with a red and a green glass, so that each eye will see only the respective picture.

Dr. Hess uses a screen composed of microscopic lenses of cylindrical form of about 1 mm. focus. This screen is brought into contact with the stereo-negatives, which are printed in such a manner that the light-source is once at the left and once at the right. The screen will transmit rays of light in one direction only. If the pictures are printed upon the same sensitive surface, and the print viewed through the same screen, each eye will see only the respective picture, thus producing the plastic effect, which is really surprising. The process will be marketed, and it is to be hoped that after the war all accessories will be obtainable.

As to the third "obstacle"— the apparent difficulty to obtain good stereograms — this will be dealt with in this little treatise by giving a short but concise explanation of stereoscopy, its nature and peculiarities.

Stereoscopic photography is based upon the principles of "seeing with two eyes." Place a round, labeled bottle of generous size about one yard away from your eyes in a central position and close the left eye. At once part of the left side will disappear and the bottle will lose its rounded appearance and look flat. Close the right eye and a similar illusion will take place, with the same impression of flatness, and part of the right side disappearing. Thus we understand that each eye sees a different picture of the same object, provided the latter be a "solid." In order to arrive at the conception of "space," we need two eyes seeing different pictures and uniting them to one; the plastic effect is thus obtained. Applying these rules to photography: If it is possible to produce the two pictures seen by the two eyes, all that is necessary to obtain a plastic effect will be to find some means to unite these two single pictures into one. The first part of this problem is carried out by using a camera with two lenses (or taking two pictures with one camera), whilst the unification of the two pictures thus obtained to one is accomplished by special instruments called stereoscopes, by the method of Anaglyphs, by the Hess, or Ives, screen.

From the above it will be understood that a stereogram will show us nature as we see it; not a flat "projection" in one plane, but plastic, rounded forms of persons, trees or objects. We can see the shady lane right before us, the spacious room as if we stood at its entrance ready to step into the familiar homestead; in short, stereoscopy furnishes us the means to reproduce nature as it is and not a mere image of it. To this add the possibility to use Agfa, Autochrome, Dufay, Paget or other color screen-plates, and it will be understood what stereoscopy really means; it is the noblest and most satisfying branch in the photographic art.

The prospective stereoscopist has but little to learn provided he masters his "one-eyed" axioms. The only difference of importance is in the selection of suitable subjects, and one could almost lay down the standard rule, "Choose subjects which you would reject with your one-eyed camera." Distant landscapes, mountain-scenery or subjects that are more than 300 yards away from your standpoint are unsuitable for stereograms, as each of your eyes will see the same picture. One can, of course, increase this distance considerably by taking two pictures from different standpoints, say ten yards apart, using telephoto-lenses; but the result will be unnatural. The plastic effect will be there, but the subject, say a mountain, will appear small and tiny, as it would present itself to a giant with a distance of ten yards between his two eyes. Hence, if a natural effect is desired, one has to remain within about 300 yards, using a separation of lenses nearly equal to that of the human eyes.

This does not mean that one has anxiously to avoid getting distant scenery into the picture; only that it should not be the principal subject. A tree, stone, person, underbrush, etc., in the foreground will generally improve the picture, as it will produce the plastic effect and make the difference in distances perceptible and obvious. Too much foreground never spoils a stereo-picture; on the contrary, it improves the plastic appearance.

As to the most suitable sizes, one has a great variety to choose from, the most popular ones being: 45 x 107 mm., 6 x 13 cm., 3¼ x 4¼ inches, 9 x 12 cm., 10 x 15 cm., 9 x 18 cm. (the once *normal* stereo-size), 5 x 7 inches and 13 x 18 cm. These sizes were not selected at random, but have to comply with certain rules in order to avoid exaggerated perspective. Since the distance between the two stereo-lenses should be about the same as the distance between the human eyes, one soon reaches a limit in suitable sizes. As will be noticed, several "normal" sizes are mentioned, yet invariably it will be better to choose a specific stereo-size, so as to obtain single pictures of square or almost square shape. Lenses of relatively short focus are a "*conditio sine qua non*," as one never can get enough "depth." No "soft-focus" ideas, no fuzziness, can be tolerated. Sharp, crisp negatives with plenty of detail are to be striven for, and one must not forget that the pictures will be viewed through magnifying-glasses, bringing to light the sins of all soft-focus enthusiasts.

The smallest size in the stereo-family is the 45 x 107 mm., so much in vogue at present. Beautiful little pictures of surprising reality can be obtained on account of the lenses having the same separation as the normal human eyes (about 65 mm.). The instruments used for this size are small and convenient to carry about and cheaper than larger ones of the same quality, though not low in price.

It is very important to strive for exceedingly sharp negatives in such a small size, as the magnification of the viewing-lenses is considerable, so that spots, blemishes or poor definition in a fuzzy picture would spoil the general appearance of the stereo-view. The chief advantages of this size are: Cheap accessories; the possibility of using the very best materials at relatively little cost; convenience and unobtrusiveness of apparatus; natural perspective; ease in obtaining the materials at almost all the good supply-stores and, last but not least, the exquisite appearance of the viewing-instruments arranged to take a great number of transparencies. For the amateur the 45 x 107 mm. size is ideal, although the serious worker who expects results of scientific value should choose rather the old time 9 x 18 cm. size, or, at least, not go beyond a plate of 13 cm. (5¼ inches in length). The greatest drawback of the smallest size is the difficulty to obtain perfect results with the modern color screen-plates. The color-screen will make itself disagreeably perceptible in the stereoscope. The same applies to paper prints. on account of the texture of the paper, and the best results invariably will be those obtained with diapositive plates (transparency-plates). If color-plates or paper stereograms are desired, it will be well to choose subjects of generous size near the camera, so as to get a large picture.

A very prominent worker and scientist (H. Kolster, *Photographische Industrie*, 1910, page 1205) shows that the 45 x 107 mm. size fills all the requirements of a reliable stereogram. Personally, I am inclined to give preference to the

6 x 13 cm. (about $2\frac{1}{4}$ x $5\frac{1}{4}$ inches) size. The separation of the lenses is well within the limit; the single pictures are large enough to yield exceedingly pretty contact-prints upon paper; enlargements can be carried up to 8 x 10 inches and higher, color-transparencies will not suffer because of a prominent screen and paper-stereograms can be easily produced. Besides, most of the 6 x 13 stereo-instruments are fitted with a "panoram-arrangement" that permits the use of one lens in the center of the whole plate. Beautiful panel-pictures or panorams can thus be produced.

Larger sizes than the above will be appreciated by the scientist who desires a relatively large reproduction of the original, the portraitist and photographer of interiors — in fact, by all those who go after serious results. The principal advantage of the larger sizes is the small scale of enlargement used when viewing, the lack of necessity to cut off a considerable portion of the single pictures (a fact which oftentimes will make itself annoyingly felt to the user of small sizes) and the admirable adaptability of the transparencies or paper-prints to coloring, as well as the undisturbed use of Autochrome or other screen-plates.

The instruments used for stereoscopy are just as simple to use as a one-eyed camera. A great variety of styles is at the disposal of the prospective stereoscopist. A reliable stereo-camera must fulfil the following requirements: Perfect parallelism of a rigid lens-carrier with the ground-glass plane; a shutter working in exact unison simultaneously on both lenses; simultaneous focusing and possibly diaphragm-setting device; lenses of relatively short foci, to ensure great depth, and, last but not least, a reliable leveling-device. These conditions are admirably complied with by the rigid or box-form stereo-cameras of square or Jumelle shape. The latter form of camera, introduced by the French makers, is the best possible, as it permits easy leveling. They are obtainable in all sizes up to 9 x 18 cm. at prices to suit all pocketbooks. Here we see the Richard Glyphoscope, 45 x 107 mm., with single achromatic lenses, an instrument arranged for taking and, by removing the shutter and diaphragm-carriers, for viewing as well; price about $20 complete with case. The best camera, an instrument of the highest precision, for the smallest size, is the Voigtländer Stereflectoscope with two F/4.5 Heliars and a third lens in the center casting a reflected image upon a top focusing-screen of the same size as the single stereo-picture. An excellent Sector shutter, a very convenient focusing-knob and exquisite finish make the camera one of leading value among its fellows. Other instruments of like precision are: The Zeiss-Ica Polyscopes, in rigid or collapsible form; the Ernemann Stereo-Reflex cameras with focal-plane shutter and spring-raised mirror; the Monobloc (by Boucher, Paris), with panoram-device and special arrangement for convenient placing of yellow light-filters behind the lenses (very important for Autochrome-photography with a rigid-form camera); the Nanna camera by Suter and Boreux, in Basle (Switzerland); the Gaumont Stereo-Bloc Notes, rigid or collapsible, and many others not so popular on this side of the ocean, but of equal precision (Lechner Stereo-Reflex; Goldmann Mignon; Zionscope; Leroy Stereo-Panoram with revolving panoram-arrangement, etc., etc.). Lovers of the folding-type should invariably choose the best, and prefer instruments of the Goerz Anschütz type, with a fourfold support of the camera-front, as this is the best guaranty for perfect parallelism and rigidity: The Goerz Stereo Vest-Pocket Tenax; Gaumont Stereo-Bloc Notes; Boreux Nanna; Ica Stereolette (supported at the base only, and constructed like the normal "English style" folding pocket-cameras, still very rigid and absolutely reliable). The above, with few exceptions, are obtainable in 6 x 13 cm. as well, with panoram-arrangement. The front-board can be pushed to one side so that one of the two stereo lenses is brought in the center of the instrument. The stereo-partition is simultaneously removed, or it can be removed by hand (Ernemann Stereo-Reflex 6 x 13 cm.), thus enabling the user to take the panoram or panel-pictures mentioned in a former paragraph.

The amateur using larger sizes will have to lay even more stress upon the precision of his instrument. While in ordinary stereoscopy a long extension is not required, it will serve the specialist and scientist, and may come in handy with cameras having a panoram-arrangement, when single pictures are taken. For stereo-photography, a camera need not have any more extension than is necessary to take pictures about one yard from the camera. Here it must be remembered that there is a "near" limit as well as a "distant" one — the nearer the subject draws to the camera, the greater will be the difference in the single pictures, until each lens will produce an entirely different picture from the other. To enable one to reduce the "near" limit to the smallest possible figure, the Zeiss-Ica Stereo-Klapp Palmos has an arrangement working in conjunction with the focusing-device which serves to decrease the separation of lenses the longer the extension gets, until the two lens-mounts come close together. This arrangement costs about $35, the Stereo-Palmos being the only instrument furnished with this automatic device. The size of this camera is either quarter-plate or 9 x 12 cm. It is equipped with Tessars and a focal-plane shutter, and will take either stereos of about 2¼ x 3¼ inches each, or the full-size pictures as above. The complete instrument will cost about $165 in New York. Other excellent instruments for large stereo-sizes are: The Goerz Anschütz Stereo-Panoram 9 x 18, 9 x 14, 8 x 16 cm., etc.; the Steinheil Multo-Nettel with three Orthostigmats and focal-plane shutter; the Suter and Gaumont Jumelles and Stereo-Panoramic Spidos; Maekenstein Stereo Panoram-Jumelles; Lechner Stereo-Reflex 9 x 18 cm., etc. Stereo-Graflexes and Stereo-Graphics 5 x 7 inches can be obtained as well, and many stereo-roll-film cameras of Kodak style are ready for the amateur. In fact, all the principal camera-manufacturers produce stereo-instruments. It should be remembered, however, that the amateur who can afford to do so should not hesitate to purchase the very best; only those to whom the bugbear of price is a serious consideration should resort to the various lens-prisms and tripod top-shifters which permit the making of stereo-pictures with a one-eyed camera.

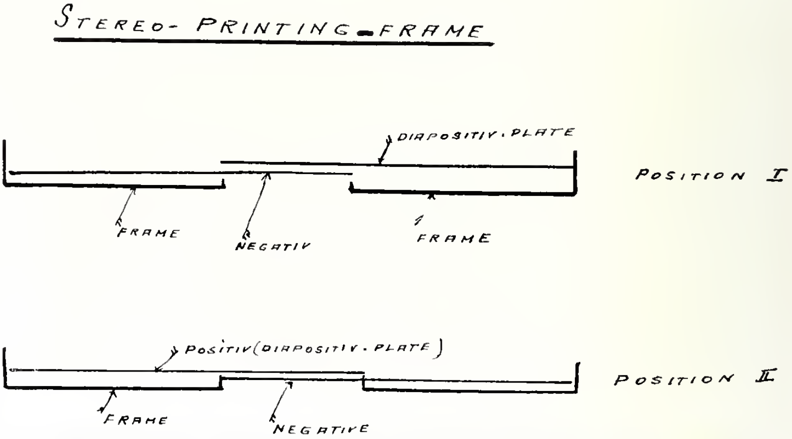
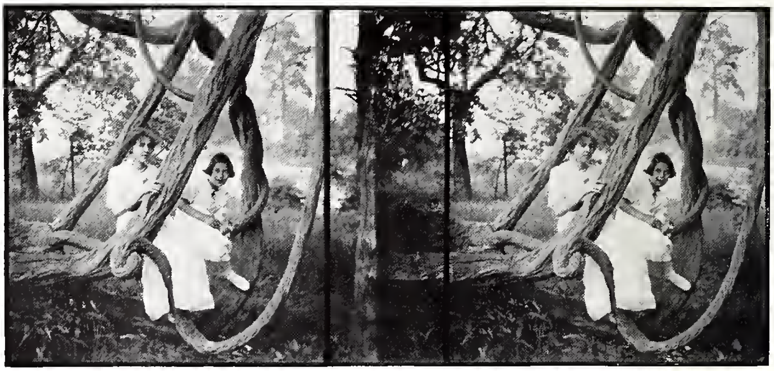


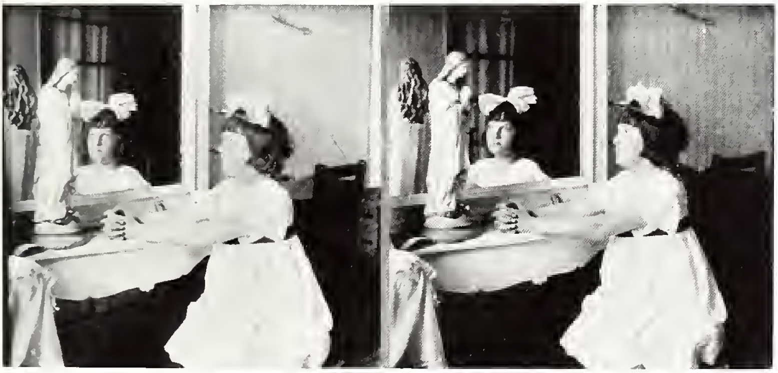
Diagram of the workings of a stereo-printing-frame, showing how negative and printing-plate are shifted.



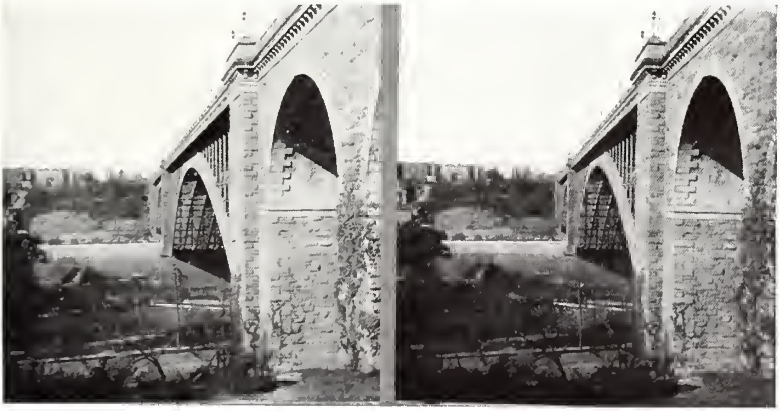
6 x 13 cm. Stereo-Panoramic Monobloc. Two Suter anastigmats, F/5, 82 mm. Picture not transposed. The black lines show how it should be trimmed; separation, $2\frac{9}{16}$ inches.

As soon as the stereo-apparatus has been procured, the process will be found to be the same as in ordinary photography — selection of subject and forgetting your soft-focus craze, as already explained, until the time comes when the positive is to be made, if one only remembers that a sharp negative is needed and that a hard negative is better than a soft one. Thus we see that it will be better to expose for the lights and not for the shadows in most cases, especially in *contre jour* effects. The phenomenon of "brightness" being the result of seeing with both eyes, exeeedingly pleasing effects can be obtained, where a one-eyed camera would yield but poor results.

The positive process is quite simple. As a rule, transparencies or diapositives will be required, on account of their suitability for coloring and rendering of fine detail. Before printing, it must be considered that the stereo-negative, as it presents itself after development, must be reversed; i.e., transposed. The two single pictures must change their places, otherwise the right eye would not see the picture taken with the right lens, and vice versa. This will become evident as soon as one tries to print. Autochrome-pictures must be transposed as well, as they would show an entirely wrong perspective — objects that were near would appear far away and far objects near. The lens that casts an "upside-down picture" reverses everything else as well. (*Vide* ferrotype-pictures.) For the purpose of transposing, the negative can be cut and the single pictures changed, or one has to use special printing-frames permitting the convenient shift of negative and printing-plate. (Sketch opposite.) A printing-frame of longer dimensions than the printing-plate and negative is provided with an opening in the center equal to the correct size of a single picture. One side of the negative is printed upon the opposite side of the printing-plate. After completing this side, both plates are shifted as shown in sketch, and the other halves are brought into contact and printed, the operator taking care to give exactly the same time, so as to obtain perfectly homogeneous results. The frames are so constructed that a mere shift to the limit will bring negative and transparency-plate into the correct position. This arrangement obviates all guesswork. It is a real pity, however, that it is almost impossible to obtain stereo-printing-frames, except 45 x 107 mm., in this country. If an ordinary printing-frame is used, it will be better to cut the negatives. If paper prints are required, it will be opportune to print the negative as it is, and the paper can conveniently be cut and mounted after fixing, toning and drying. In the finished stereogram care must be taken that the distance between two identical points on the single pictures is exactly the same as the distance (separation) between the two lens-centers on the camera. Each picture must not contain any more than the other one; thus it will be understood that the small-size stereograms will have to be trimmed considerably, whereas the larger sizes can be transposed without cutting any portion to speak of. Generally, it will be sufficient, however, to adjust the identical points to the correct distance, inasmuch as cutting off part will result, as a matter of course. Instead of printing-frames, one can use stereo-projectors on the principle of an enlarging-camera (three-part camera), with lenses in the center, the negative on one and the diapositive plate at the other end. These instruments will transpose the pictures automatically, and are not bound to any specific size. (Ernemann, Steinheil, Lechner, Goldmann, Ica, etc.)



Taken with Lechner Stereo-Reflex, 9 x 18 cm. Suter aplanats, F/6, 12 cm. focus. 3 seconds' exposure at F/10, December, 2 P.M. The difference in single pictures correctly transposed is shown; separation, $3\frac{3}{16}$ inches.

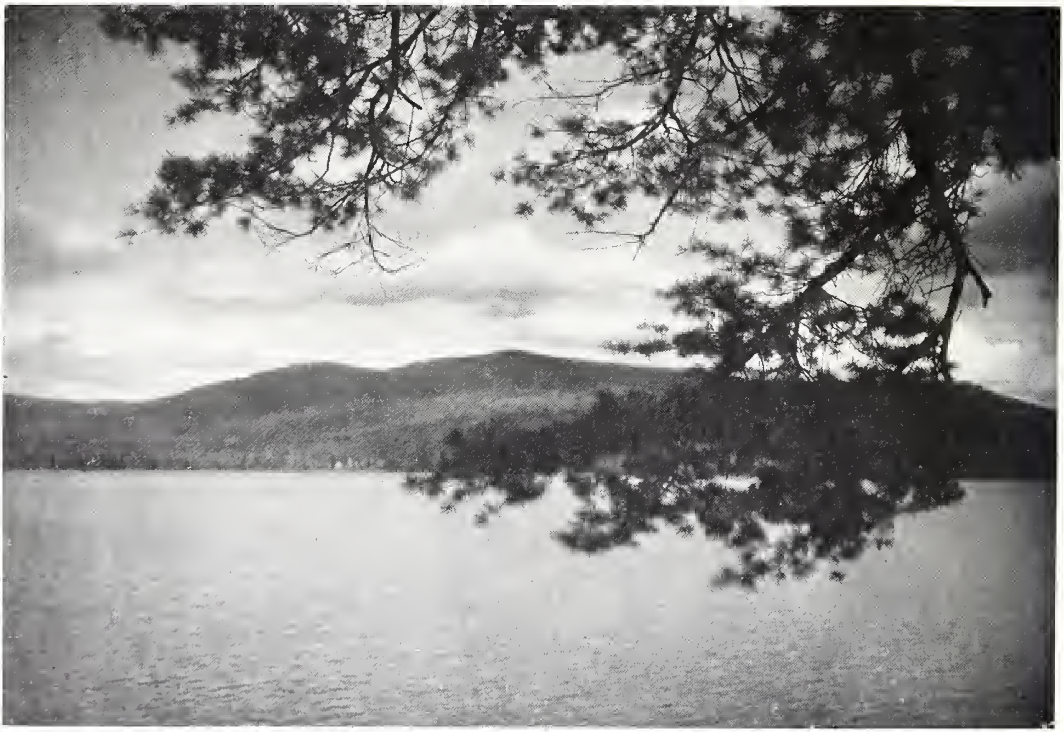


Taken with Lechner Normal Stereoscopic View-Camera, 9 x 18 cm. 2 Suter aplanats at full opening, F/8, $\frac{1}{50}$ second, bright day. This picture will be very effective in a stereoscope when correctly transposed and trimmed; separation, $3\frac{7}{32}$ inches.

The finished stereo-positives are viewed in stereoscopes. These are instruments that consist of two achromatic magnifying-lenses mounted upon a frame, and permit of focusing as well as changing of lens-distance laterally. A second frame, the picture-carrier, is attached to the former by a rod, or the whole is cased in, having the appearance of a small or large field-glass or of a little cabinet, if the stereoscope is arranged to take a great number of stereograms. The object of the stereoscope is to unite the single pictures into a whole single view, with plastic effect, as has already been explained. In order to obtain a natural perspective, the viewing-lenses should have the same focal length as the lenses on the stereo-camera that served to take the picture. A difference of an inch or so will not impair the results to any noticeable extent. Too long a focus on the stereoscope lenses will make the subject appear small and insignificant and far away; too short foci will render unduly large views drawn close to the eyes. (The correct focal length would be equal to the camera-extension and not, as many, even very good, writers contend, such as to place the view at an apparent distance of some 25 yards, the normal distance of sharp eyesight.) The separation of the stereoscopic lenses is also important: it should be equal to that upon the stereo-camera.

Good stereoscopes may be obtained at the better optical stores. The best and most convenient ones are those made by the Ica company, the Taxiphotes, by Richard, taking either one picture, or in the form of cabinets serving as a storage-device, a single turn of a lever bringing a new view into position. After the series has been viewed, a box is withdrawn and a new one containing a fresh supply of stereo-views placed into the instrument. (See the Stereodromes, by Gaumont, and the Goerz Precision Stereoscope for transparencies as well as for paper stereograms, easily taken down and permitting the quick exchange of lenses for different focal lengths.) A fine stereoscope is somewhat expensive, it is true, but it will be an ornament to the room where it is kept, a device ever ready to entertain the owner and his friends — not by showing flat, lifeless projections of nature, called pictures, but seemingly containing all the places, all the persons and objects worthy to be photographed in natural shape, size and color.

It is to be hoped that stereoscopy will at last be lifted out from its Cinderella existence, and receive the attention and interest it so justly deserves as one of the great achievements of human genius. So far, only a small number of amateurs is enjoying the real delight, the unequaled pleasure, contained in the wonderful pastime called stereoscopy.



SOUTH POND, ADIRONDACKS GEORGE S. HAWLEY

How to Improve One's Negatives

ALBERT J. TREICHLER, M.D.

FEW among the average amateurs ever think to try to improve their negatives. If their negatives prove to be correctly exposed, rightly developed and artistic in composition, they are satisfied. They will fill up pinholes and scratches with opaque, intensify the negative if it be thin and reduce it if too dense. Having done this they stop, believing that all that can be done has been accomplished. They know that professional photographers always retouch and otherwise improve their negatives. They also believe that the art of retouching is limited to portrait-negatives.

In this brief paper I shall not go into the details of general and local reduction or intensification by chemical means. Nor shall I mention the working-in of backgrounds and other accessories. These methods are fairly well known and are fully described in any good photographic manual. I shall rather tell of the mechanical means so seldom described in text-books, but to be found scattered in photographic periodicals, or to be learned by those that practise them.

A critical worker will very seldom be satisfied with his negative, and will usually find some defects and imperfections which he wishes to correct. These defects and imperfections are varied, such as markings due to dust-particles, scratches and air-bells; exaggeration of light and shade; contrasts due especially to underexposure or false lighting. Then, if some undesirable objects could be removed or made less conspicuous, the negative would be improved. I mean such objects as telegraph-poles, lamp-posts, an ugly fence or sign, branches and twigs of trees, glaring portions of architectural subjects, etc. Where is the photographer who has not wished some of these things eliminated or subdued from an otherwise perfect negative?

Good advice is this: Take your time in composing your picture, focus it for the effect you wish to reproduce, give the correct exposure and develop for the degree of contrast you like best. When the negative is dry, make a proof and study it carefully and critically for imperfections and defects. Then think how you can eliminate these and otherwise improve your negative.

If some parts of the negative are too thin, or a shadow prints too dark, you will find that some penciling here and there will soften the part. This you will do on the film side, previously coated with retouching-fluid, and using not too hard a pencil. With the pencil you will also be able, as a rule, to remove or soften the undesirable objects previously mentioned. If the result is still unsatisfactory to you, turn the negative over and work on the glass side. Coat this with matte varnish and work on it with powdered crayon and stump, or with a brush dipped in watercolor and gum arabic. The most suitable colors for this kind of work are ivory- and lamp-black, sepia, vermilion, Venetian red, Indian red, lake, carmine and French blue. They are sold in a moist state in tubes or pans. Aniline and other colors recommended for coloring photographs and lantern-slides are not so suitable for this kind of work as the moist watercolors.

Hinton, the great English pictorialist, improved his negatives by the following clever method. Take a piece of very fine tracing-paper, or paper mineral, as free from grain as possible, wet it with water and stretch it smoothly on a blotter. Run a little mucilage or paste along the borders of the negative on the glass side. Place this on the wet paper, press firmly and lay on edge to dry. The paper will dry in a few minutes and will adhere to the glass without wrinkles. Now work on the paper with pencil, stump and crayon, or brush and color, to add density where the negative is thin. Should you wish to render the paper more transparent in some parts, paint it with Canada balsam dissolved in turpentine, one dram to the ounce.

For local reduction, very fine pumice powder, emery of the finest grade used by opticians and jewelers or ground cuttlefish-bone and resin mixed in equal parts are very useful, but must be handled carefully. Take some of the abrasive on your finger-tip and rub it on the part to be reduced in a circular motion. If the part is too small for this, use the abrasive on the point of a paper-stump. Or you can use in the same way a rubber ink-eraser. In this way you will render the film more transparent, thus allowing more light to pass through it during the printing-process.

There are many other ways to improve one's negatives. They can be found scattered in photographic literature, and it will pay the earnest worker to study and practise them. By adopting these methods many negatives will be saved from the rubbish pile and will add to the pleasure of the photographic worker.

The American Annual of Photography.

The Autochrome in Bird-Photography

DR. FRANK PENROSE

ALTHOUGH I approach this question from the point of view of the naturalist, I may be allowed to enter into a few technical details with regard to the apparatus, and also the question of gaining approach to the birds. To take the latter first, there are three ways, as I do not doubt other lecturers have told you, of getting birds to be sitters. Much the most important way is to approach them during the nesting-period, and those who have studied the various illustrated journals will have observed that, in most cases, the best photographs have been obtained with the birds in the neighborhood of their nests. Another way, of course, is by feeding the birds, and I shall hope to show one or two examples of the results of that method. The third means of access is stalking the birds, in which case, however, the difficulties are very great.

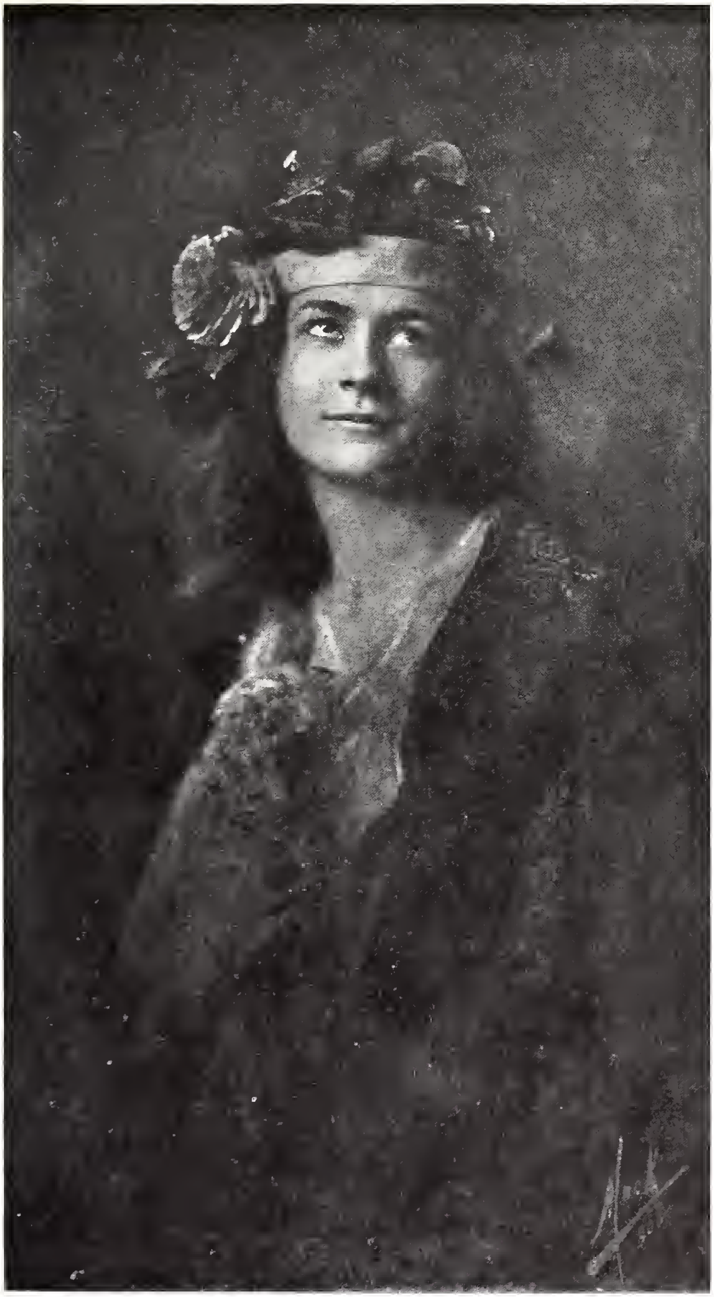
In using color-plates one is manifestly hampered by their slowness. The perfect color-plate, when it arrives, will have the rapidity of an S.S. Imperial, on which exposures can be obtained up to $\frac{1}{25}$ second. That is absolutely impossible up to the present, so far as I have had personal experience of the color-plates. I must say here that my experience is confined almost entirely to the Lumière Autochrome. I have tried the Paget plate, and have not succeeded; but that is my own fault. I have also tried the Dufay, and have not succeeded; again I think owing to my own fault. I have never attempted the Sanger-Shepherd process. The results with Lumière plates have been generally successful. Mr. J. H. Gear most kindly hypersensitized one or two boxes of the Lumière plates for me, but, unfortunately, in every exposure with these plates, the birds happened to move at the critical moment, and one and all were failures.

To approach the sitting bird, the method I have adopted is to use a hiding-tent, some 5 ft. long by 4 ft. high, with a series of ventilation-holes at the top, and a series of peepholes lower down, and below these little sleeves through which the lens can be projected. The whole of the canvas is stretched tightly over canes, and made tense and taut, in order that no part of it may flap, and thus disturb the bird. It is best to arrange the tent approximately in position in the late afternoon, just before it is dark. The arrangement may be fixed up within ten yards of the nest of the bird, and the bird, after a good deal of hesitation, will become accustomed to the object by the time it is necessary for her to settle upon her nest for the night. The next morning the photographer, with one or two companions, goes to the spot, and places the tent in the position most favorable for photography, always remembering, of course, the direction of the light, and if possible having the sun behind one or at right angles. This direction must be taken into account when selecting the site for the tent overnight.

The photographer takes up his position inside the tent, and his companions walk away. By the time the camera has been leveled and fixed, and all is ready, the neighboring wild-life will be resuming its normal conditions. The tent is quite comfortable, reasonably spacious so as to prevent cramping, and contains an easy seat, so that the waiting is by no means irksome. Before the first hour has passed an exposure will probably be made.

The longest distance from the nest at which I have had any success is 18 ft. The distance of the tent from the camera depends, of course, entirely upon the lens one is using, and the character of the lens required is rather restricted. One wants to get as rapid a lens as possible. It should work at not less than F/8, and it is a great advantage to have one more rapid than that. For bird-photographs the focal length may range between 6 and 18 inches. The great importance of having a lens of long focal length is that the bird need no longer be just underneath the camera. A bird the size of a pigeon is not a very big object on the plate at the least practicable distance, and therefore a long focal length is a very great advantage. The lens I have personally favored is a Zeiss Protar, of 13 inches, working at F/6.3, and I have lately used a 17-inch Ross Telecentric, which promises to be a very good lens for the purpose. With the advantage of a fair distance between lens and bird, there are nevertheless certain disadvantages, the most pronounced of which is the narrowness of that part of the field of view which is in critical focus. I have got over this difficulty by slanting back the camera so as to bring the foreground and the bird in the middle, and the immediate background more or less into focus. I do not think it really distorts the image sufficiently to do any serious harm. There, again, one is practically compelled to work at not less than F/8.

I used an ordinary half-plate camera, of course on a stand, and in order to get things comfortable



GENRE-STUDY
J. E. MOCK

it is convenient to have a tilting table. The top of the camera is double, and one is able to move the upper part with a hinge, so that the camera can be raised or lowered to just the right position. The very best possible shutter for ordinary work is just the cap, for one is working slowly. Unfortunately, in the tent the use of the cap is impossible. If the hand were obtruded outside the tent it would scare the bird. I have tried various focal-plane shutters, but all of them were too noisy. The all-important thing about a shutter, in addition to its accuracy, is its silence. The condition of silence is a difficult one to ensure. The birds are very much affected at first by noise. The tent itself is something unusual and suspicious, and if there comes from it the sound of clicking, off they go. The Linhoff shutter, which has a leather brake, can be made absolutely silent. The Bourdon shutter simply remains open as long as the bulb is pressed. Then there is the Dallmeyer studio-shutter, which consists simply of one or two flaps which go quite silently. As one is not dealing with rapid exposures, the question of rapidity in a shutter does not matter. The ideal to be aimed at is efficiency and silence.

Another consideration on the question of tackle is that of lightness. Bird-photography is a case in which one has to go to one's sitters, and very often over rough country. Some of my photographs have been taken on the tops of hills some 3,000 feet in height. For others it has been necessary to take journeys by boat, and it is desirable, remembering that the half-plate camera and stand are essentials, to eliminate or make light the accessories as far as possible.

I may say a few words on the question of exposure. The exposure for the Lumière plate in best summer light at F/8 for ordinary landscape is given as 1 second. That is according to the instructions which were originally issued, but the plates have got a little faster during the last two years, though not very much. In the case of bird-photographs, one is working within ten feet of the object, and very often not in the open, but in the shadow. The best summer light is by no means always present. The nearness to the subject brings one down to an exposure practically, when all is favorable, of somewhere about 4 seconds at F/8, and my practical experience has been that exposures vary from 5 seconds — I hardly ever get any exposures as quick as 4 seconds — up to 3½ minutes, and even longer. When the bird is comfortably settled on her nest, it will often remain quiet for a few minutes, more especially if it is a game-bird, which is protectively colored; but all birds that live in colonies, like gulls and terns, are extremely restless, and anything like an exposure of minutes would be impossible. Only exposures of at most ½ second are likely to be of any use in such cases. Little birds, again, are extremely difficult on account of their great restlessness.

One practical point relates to the intervening leaves and foliage which have to be circumvented if a color-view of the nest is to be obtained. Some workers cut a line through the grass, but it is much better to carry a packet of hairpins, and peg down the long grass so that the view is uninterrupted. Then, the work being finished, the hairpins can be removed at a touch, and the nest will remain inconspicuous, as it would not do if the grass were cut.

In conclusion, I should like to say that, if one has once taken up this line of work, it will prove to be extraordinarily fascinating. It is really a good sport. Many whom I am addressing have, no doubt, been keen fishermen and keen shots. So have I, but I find now most certainly that this is far more interesting from the natural history point of view. To watch the wild bird-life for two or three hours is more intensely exciting than any form of fishing, with the exception, perhaps, of the first rush of the salmon, and has nothing to equal it from the purely sporting point of view.—*Extracts from a paper read before the Royal Photographic Society, London.*

IF THE ARTIST LIMITS HIMSELF TO THE TRANSCRIPTION OF A REALITY WHICH IS BEFORE HIS EYES, IF HE IS RESIGNED TO BE A DECORATOR OR AN ENTERTAINER, HIS WORKS MAY INTEREST AMATEURS, BUT THEY SHALL NEVER EVOKE A SYMPATHETIC ECHO IN ANY ARTIST'S MIND.—*Ernest Chesneau*

Outdoors with the Kiddies

CHARLES J. ADAMS

In all the realm of amateur photography there is nothing more fascinating than the portrayal of childhood. Every home with a child in it should have a camera too. It need not be an expensive one, unless the camerist intends to devote his efforts chiefly to indoor-portraiture. Under favorable circumstances, it is true, admirable results can often be obtained indoors with very inexpensive equipment. But that, as Kipling would say, is another story. The beginner, to whom alone this brief article is addressed, will find difficulties enough confronting him in his endeavors to produce satisfactory pictures of the little folk in what might be called their natural habitat, the bright world of outdoors.

ONE OF THE KIDDIES CHARLES J. ADAMS

Surely no extended argument is required to prove that the common practice of grouping children in more or less graceful attitudes on the lawn or under the trees, and training one's camera on them with the peremptory demand that they keep perfectly still, is seldom productive of permanently gratifying results. However it may be under the artificial conditions that exist beneath the skylight of the professional studio, outdoors the only poses that can be counted on to yield truly interesting pictures are those into which the child falls naturally and spontaneously, whether resting or in the full course of his play.

The recognition of this fact has led many camerists to the belief that the highest success in this field is possible only by the use of extremely rapid lenses, fitted in costly cameras of the reflecting-mirror type. At first glance it might appear that the arguments in favor of such expensive apparatus were quite unanswerable. So distinguished an authority as Mr. C. H. Claudy, whose pictures of children are wonderfully successful, declares that, "It should be fairly obvious that a reflecting-mirror camera is *par excellence* the camera for use in making pictures of children, because children move rapidly, invariably assume the pose you most desire in the place you are not, and must be caught then or not at all; and because, in addition to permitting you to get a glimpse of the composition of the picture as a whole in the minimum of time, the use of the mirror ensures you, even when working fast, a reasonably sharp focus where you want it."

These, and others which he adds, are weighty arguments; and those who can afford such apparatus may go to work in the comfortable assurance that they are equipped to do anything in this particular field that can be done. At the same time, it is the writer's contention that equally admirable results can be obtained with the simplest of cameras and the least expensive lens. The use of the humbler equipment requires, however, that one adopt a theory of work entirely different from that which underlies the operations of those who aim at speed. When all has been said that can be said in favor of speed-work in picturing children outdoors, there is quite as much that can be retorted, and with better philosophy, the writer believes, in support of deliberately slow exposures.

To begin with, let it be understood that artistic and therefore permanently satisfying results can never be accomplished by speed alone. Speed, if it be speedy enough, can stop the most rapid action; and there its practical utility ends. But pictures of suspended action, so to speak, however they may appeal as curiosities, are rarely pleasing. If, for instance, you are trying to make a picture of a boy in the act of throwing a ball, you may, perhaps, be able to catch him in the very midst of the throw, with arm half extended. But the resulting picture will not bring to the mind of the beholder so full a sense of violent action as will another taken in that instant's pause when the arm is drawn back preparatory to the forward swing. Psychology plays an important part here, and, although he was probably unaware of so much as the name of the awe-compelling science, Lessing penned a paragraph, years ago, in his "Laokoön," that is worthy of being repeated in this connection. He said:

"If the artist, out of ever-varying nature, can only make use of a single moment, and the

THE KIDDIES AT PLAY

CHARLES J. ADAMS

painter especially can only use this moment from one point of view, whilst their works are intended to stand the test not only of a passing glance, but of long and repeated contemplation, it is clear that this moment, and that the point from which this moment is viewed, cannot be chosen with too great a regard to results. Now that only is a happy choice which allows the imagination free scope. The longer we gaze, the more must our imagination add; and the more our imagination adds, the more we must believe we see. In the whole course of an emotion there is no moment which possesses this advantage so little as its highest stage. There is nothing beyond this; and the presentation of extremes to the eye clips the wings of fancy, prevents her from soaring beyond the impression of the senses, and compels her to occupy herself with weaker images; further than these she ventures not, but shrinks from the visible fulness of expression as her limit."

In a later paragraph Lessing adds: "Furthermore, this single moment receives through art an unchangeable duration; therefore it must not express anything of which we can think only as transitory. All appearances, to whose being, according to our ideas, it is essential that they suddenly break forth and as suddenly vanish, that they can be what they are but for a moment — all such appearances, be they pleasing or be they horrible, receive, through the prolongation which art gives them, such an unnatural character, that at every repeated glance the impression they make grows weaker and weaker, and at last fills us with dislike or disgust of the whole object."

It follows, then — does it not? — that, in our efforts to make pictures of children at their play, we should seek our opportunity for truly pictorial results in the less violent actions, and, better still, in those momentary pauses that are constantly recurring, even in the midst of the most strenuous sports. Philosophy backs us up in this procedure, and a little experimenting will furnish empirical proof of the soundness of the doctrine. It is interesting to note that the great majority of the pictures taken by Mr. Claudy and others with speed-cameras could have been obtained just as well, so far as action is concerned, at least, with an ordinary hand-camera and rapid rectilinear lens.

Having made up our minds, then, that the least expensive equipment will enable us to work quite as fast as we desire, it remains to consider the best method to be employed in using it. The owner of a reflecting-mirror camera has the advantage — if it be truly an advantage — of being able to follow his intended victims wherever they may go, and, while his strength and patience hold out, to be ready to snap them at any moment. If one attempts the same procedure with an ordinary hand-camera, success is more a matter of good luck than of skill or judgment. The method to be outlined combines the advantage of convenience which attaches to the artificial and otherwise unsatisfactory method of posing one's subjects with the artistic advantages to be found in snapping them unawares, when they have spontaneously fallen into the pose desired. Such limitations as it may at first glance appear to possess will be found by trial to be more in seeming than in reality. A little patience and willingness to take thought beforehand will enable one to obtain by its means results that, in the writer's humble opinion, are on the whole superior to those obtainable by any other method.

As I plan to make all my exposures with the "bulb," I habitually use a tripod. It will at once be apparent that, except on cloudy days, or when working late in the afternoon, I have to stop down considerably in order to avoid overexposure. Incidentally this gives greater depth of field, which, for the kind of work under consideration, is no little advantage. If greater diffusion is desired in the final result, the precise amount that is desired can easily be obtained in enlarging.

I set up my camera where I want it, with due regard always to a suitable background. All that is then necessary is to lure the children into range and within the field of satisfactorily sharp focus. Patience, and perhaps a little craft, are always crowned with success. It then remains to wait for the auspicious moment to squeeze the bulb. Under ordinary conditions it is possible to set the diaphragm so that one-fourth or one-half second will be the correct exposure. Either of these is easy to give with the bulb, and, if necessary, I rarely find difficulty in seizing a moment when I could give as much as one second without danger of movement. At least nine-tenths of my exposures result in negatives that, so far as evidence of movement is concerned, are satisfactory; while, with respect to other essentials, I believe my proportion of successful pictures is at least as great as could be obtained by means of a reflecting-mirror camera and rapid lens.

As the proof of the pudding is always to be found in the eating, the writer ventures to submit a few of his prints. A word or two of explanatory anecdote may not be out of place.

One afternoon, on returning home, I discovered two youthful members of the family enjoying themselves on an improvised see-saw in the back yard. The idea of a picture at once occurred to me. The place the children had chosen for their play was, however, impossible for picture-purposes, on account of unsightly objects which would necessarily obtrude themselves in the background. I therefore suggested to the kiddies that, if they would remove their see-saw to the front of the house, I would get out my camera. They were ready by the time I was, and, a moment or two after the interrupted game was resumed, had entirely forgotten the presence of the black box on stilts. In fact, it is my experience that they will forget the camera much more quickly when it is stationary than when one carries it around in his hands. I stood beside it, bulb in hand, and, after a brief period of waiting, the moment I had counted on arrived. The boy, in a spirit of mischief, failed to respond with the necessary kick of the legs when his end of the teeter touched the ground, and his sister was left high in the air, half-frightened, half-pleased, awaiting his royal will to let her down again. The situation lasted but a moment, but it was long enough to enable me to obtain a fully timed negative, although I had stopped down to U. S. 32, and was using a three-time color-screen.

The picture of the chess game was made late one afternoon, when the children knew, if they had stopped to think of it, that the camera was pointed at them, but were making no attempt to keep still. It is evident from the picture that both of them are wholly intent upon the game. The moment chosen for the exposure was when the boy was on the point of lifting a piece, but hesitated at the critical instant, in doubt which of two moves to make. I could have exposed that plate for three seconds if it had been necessary.

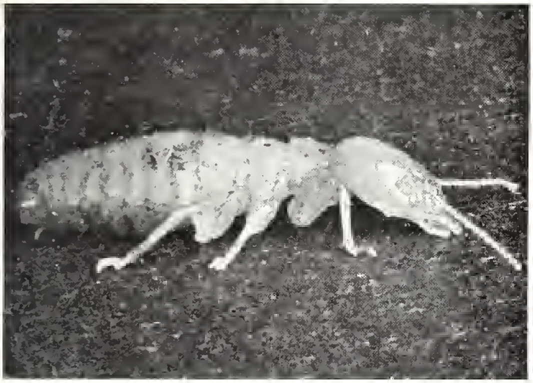
The scene by the brook illustrates a slight variation in method. I had pretended to take a picture of the view without figures, and then, when the children thought the work was done, called their attention to some water-skaters near the shore. Their interest in watching the manœuvers of the curious little wrigglers afforded opportunity for me to make three separate exposures, each of which was entirely successful.

The child lying in the grass was looking straight at me as I sat beside the camera. Her thoughts, however, were not on the picture-making, for I was telling her what she seemed to consider a most thrilling story, although I am afraid it would not take a prize in any fiction contest. However, it served its purpose to perfection. The pictures of the infant toper, of the game of mumblety-peg, and of the sisters reading will, perhaps, tell their own story with sufficient clearness to render comment superfluous.

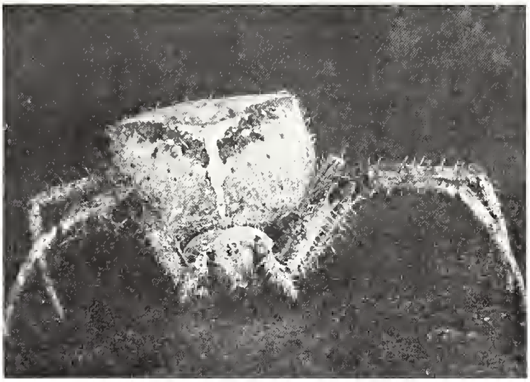
With all their artistic imperfections, these pictures serve to illustrate a method which the writer has used with uniform success, not only with his own children, but with many others less familiar with the sight of a camera and therefore more difficult to manage. This method may be summed up as follows. It is the reverse of that of the reflecting-mirror enthusiast. Instead of going after the children, I induce them to come to me. I deliberately place them in front of the camera, or persuade them to place themselves there, and then I see to it that they become so deeply interested in some affair of their own that they forget all about me and my business with them. If I can't succeed when I have accomplished this, assuredly the fault is with me, not with the method.

AFTER THE RAIN

B. F. LANGLAND



TERMITE WORKER



ORBWEAVER SPIDER

With a Camera in Insect-Land

LEHMAN WENDELL

THE study of insect-life with a camera, whether practised as a photographic hobby or as a scientific study, will be found to be an absorbingly interesting pastime. There is always something fresh to be learned, some new aspect of the subject to be investigated, and the study cannot fail to interest him who is at all interested in the natural sciences.

Insects are the most widely distributed of all animals, and are to be met with in practically all parts of the habitable world, from within the Arctic Circle to the Equator, in dank tropical swamps, on burning desert sands, in deep underground caves, on lofty mountain peaks far above the snow-line. Go where you will you will find some form of insect-life, so that subject-matter for the camera is never lacking. Your own back yard will keep you busy for weeks, while a city park, or a neighboring marsh or woodland, will furnish material for a season's work.

To many it may seem like a waste of time to spend one's hours in photographing creatures which so often prove a nuisance, if not a direct menace; but once become interested in this branch of photography and you will find that your time is well spent. Considered purely as a photographic hobby it is full of delight. Many little difficulties arise from day to day, and these must be solved before suitable pictures can be produced, a fact which only makes the final picture the more valuable to him who has produced it. Besides that, it develops in us the power of observation; it teaches us to use our eyes and ears and to be keenly alive to all that surrounds us, and we cannot overestimate the importance of this. The greatest value of insect-photography, however, lies in the fact that it is primarily a scientific study, and should be pursued as such. Your city library undoubtedly contains many excellent text-books on entomology, and these should be consulted after a day's hunt. You will be surprised to learn how vast the subject is. For instance, about three hundred varieties of crane-flies are to be found in the United States, while of beetles, alone, we have no less than ten thousand varieties.

In the following pages we are brought face to face with some of our most common insects, and we see them as they appear to the keen-eyed camera, or, if you will, as they appear to each other. It will perhaps come as a surprise to many to learn that in our own back yards lurk such awful monsters. There is something fascinating in the very unfamiliarity of these furred, hairy, beaked and armored creatures. Besides these little-big monsters the Siegfried dragon, that masterpiece of uncanny stagecraft, becomes tame in comparison.

What could be more terrifying, for instance, than a spider from a fly's point of view. Its claws of polished chitin, sharp as the point of a needle, its battery of eyes of different size, its hairy skin covered with hollow sensitive bristles, must strike terror to the fly. And small wonder, for the spider is the embodiment of ferocity. Some of them hunt their prey, jumping upon it like a miniature tiger; but the majority form webs of

HARVESTMAN

CRANE-FLY

silken threads, which communicate with a lair where the spider can recognize the slightest vibration of the web, and whence it can rush out to further entangle its prey.

According to Huxley the spider lives in the shadow of a unique law which declares that the female shall be in all things stronger and wiser than the male. Nowhere else in nature is there such an astounding sex-relation, for it is the chief object of the male spider to escape being devoured by the female which he is about to woo. The latter watches his timid hesitating approach, immovable as a sphinx; then there is a sudden rush, a brief struggle — and an ogress drops aside the body of a gallant knight, sucked dry. Two, three, half a dozen other suitors may meet a similar fate before one succeeds in soothing her.

Crane-flies are interesting subjects for the camerist. These insects are often taken for big mosquitoes, but they differ entirely in habits and do not bite. Their power of flight is not well developed, and it is therefore an easy matter to catch them. However, great care must be exercised in capturing them, because their legs are so feebly attached to the body that they are easily broken off. Their ability to walk is very poor, for they use their long legs awkwardly, as if they were in the way. This has suggested the rhyme:

"My six long legs, all here and there,
Oppress my bosom with despair."

Why the crane-fly should be provided with such stilt-like legs is a puzzle; and yet, from what we know of the laws of development, we are led to believe that they serve some important function in the life of the insect. It would seem that their length bears some relation to the great length of the abdomen, and enables the insect better to deposit her eggs than would otherwise be possible, for when the female is about to lay her eggs she stands nearly upright on her long legs, thus enabling her to thrust her ovipositor straight into the ground.

The harvestmen, sometimes known as daddy-long-legs, are common in most parts of the United States. They are perfectly harmless, and there is no occasion for alarm when they come sprawling up one's neck. They feed on small insects, such as plant-lice, and they are said to pounce upon these as does a cat upon a mouse, and to seize them with their palpi as if with hands. They are said to devour their prey, chewing and swallowing it instead of merely sucking out the blood, as do the spiders. It is a common practice with children to catch these creatures and to say to them, "Daddy-long-legs, tell me where the cows are, or I 'll kill you." As the poor frightened animal points its legs in all directions, it usually earns its freedom, but often at the price of a leg or two. However, this does not disconcert the animal in the least.

Harvestmen are easy to find and not difficult to photograph. Their legs are so unusually long that it is better not to include them in their entirety in a picture. They are feebly attached, and one must therefore handle the creature with care.

Moths and butterflies are among our most interesting insects. The "prominent moth," pictured elsewhere in these pages, is a typical specimen of the former. With its shaggy head and long "horns ' it reminds one of a Texas steer. Strange to say, this creature is not covered with hair at all, but with tiny scales, and so minute are these that when the animal is being handled they come off in the form of a fine dust. If you examine a moth with a microscope you will find that these scales are arranged with a certain regularity; in the higher butterflies they lie in rows as regular as the shingles on a roof. The use of these scales on the wings is to strengthen them, while on the body they serve as a protection, being a sort of armor. They also serve another purpose, namely, that of ornamentation; the beautiful color of some of these insects being due entirely to the scales. Moths and butterflies subsist entirely upon liquid food, and the head is provided with a long sucking-tube, with which the insect sucks nectar from flowers, much as a lad sucks soda-water through a straw.

Another interesting creature of the back yard is the common locust or grasshopper. He is found in all parts of the United States, and in some of the central states he has become a periodic menace and has driven more than one farmer into bankruptcy. At times he appears in swarms of countless numbers, darkening the sky like a cloud and devouring every blade of vegetation, leaving desolation and ruin behind him. In Russia these insects once appeared in such numbers that they formed a wall four hundred miles long and two feet high. They threatened a famine, and thousands of soldiers, armed with shovels, were sent out to destroy them. In the year 1478 thirty thousand persons starved to death in Russia, the result of their raids. Strange to say, man has found some use for this troublesome pest. In Texas, Kansas and Colorado, where locusts are most abundant, the farmers capture them wholesale, and then dry them in the sun and use them as chicken-feed. In Arabia they are used as food by the natives. They are first dried in the sun, after which they are ground up and baked into bread, or fried in oil as a delicacy. The strange custom of using these insects as food originated in biblical times, for we read of John the Baptist: "and his meat was locust and wild honey." The locust of the Bible was a larger species than we find in this country, being about two and one-half inches in length.

It will be seen that the insects pictured in these pages are strikingly odd, differing to a marked degree from the illustrations found in most text-books. This is due not so much to the size of the pictures as to the fact that the insects have been photographed from their own level. Why entomologists should insist on always photographing their specimens from above is a puzzle. We would never think of always looking at a man from above, and, surely, these tiny creatures have an equal right to be viewed from their own level.

In beginning the study of insect-life with the camera obviously the first thing to be done is to capture the insects and prepare them for the camera. Insects that crawl can usually be caught by simply inverting a wine-glass over them, whereas those which fly may have to be caught with a hand-net, similar to those used by students of zoölogy. However, on damp days the winged insects may often be caught with the bare hands.

I must hasten to add that I always avoid, as far as possible, handling insects with the bare hands, because many, on being caught, emit vile-smelling fluids, the odor of which even soap and warm water will not entirely remove. An insect of this sort is the so-called "stink-bug," familiar to many a lad who has eaten berries from the bush. There is another reason, as the reader may guess, why insects should not be handled with the bare hands. Any one who has seen the seething mass of red-hot vengeance that can pour out of a hornet's nest needs no further explanation.

When catching insects it is not safe to place too many in the same receptacle, as they are apt to attack each other. I have even seen insects

LOCUST, OR GRASSHOPPER

PROMINENT MOTH

attack members of their own kind. For instance, when I found my first termitary I witnessed a battle royal between a winged termite, two "workers" and a "soldier." I had placed them all in a wine-glass, and no sooner had the soldier discovered the others than he began to attack them. The sole duty of the termite soldier is to fight, and nature has provided him for this purpose with an enormous head and powerful mandibles. With these weapons he will attack insects many times his own size, snapping his jaws with fury, and betting-chances are all in his favor. In less than a minute after the four termites had been placed in the glass all save the soldier were dead. So vicious had been the attack that the winged termite was ground almost to a pulp, while one of the workers had been cut in two.

As a rule insects must be brought under the influence of ether before they can be photographed successfully. To administer this, first invert the wine-glass over the insect, then place a drop of ether on a small tuft of cotton and slip it under the glass. Now watch the insect closely and try to stop just short of total relaxation. Too much ether will kill the insect, and when this happens it is difficult to do anything with it, because the legs may either be too limp to support it, or they may be extended and unyielding. If possible, administer just enough ether to keep the insect asleep while the exposure is being made; no more, no less. This is a delicate operation, and experience is the only guide. I have seen some insects fall asleep in a few seconds, whereas others required as many minutes. In one instance I was entirely unsuccessful; I wished to photograph the larva of a certain beetle, and although I kept it under the influence of ether for over an hour it would not fall asleep. Needless to say, each insect should be anesthetized immediately before the picture is taken.

In rare cases one will meet with insects that do not have to be anesthetized. I have seen moths that would remain immovable for hours. My "prominent moth" was such a one. Crane-flies will often do the same, and I recall that at one time a common garden-spider that had been placed before the camera became angered, assumed a warlike attitude — front legs raised as though to ward off a blow — and remained in that posture for fully five minutes.

In arranging insects it is useless to try to handle them with the fingers. A couple of pins, inserted in slender wooden handles, should be used for the purpose, as the insects will not so readily adhere to these.

So many little things must be kept in mind in insect-photography that one is apt to forget all about composition, but it is to be remembered that a pleasing arrangement is just as essential here as in other branches of photography. It is not enough merely to stand the insect on its legs and then to make the exposure; but it must be posed quite as carefully as a larger subject. Many insects have long awkward legs, and it requires no little skill and taste to arrange these gracefully. If they are unusually long this may be impossible. The legs should, of course, be arranged in as lifelike a manner as possible.

Now a word about backgrounds. They should be of the simplest kind. I have found that most insects appear to best advantage against a white background, whereas in rare cases a black ground gives a better effect. For the former I use a sheet of smooth white paper, laid flat on a chair and slightly turned up behind. By turning the paper up it will reflect light on the insect and thereby reduce the otherwise harsh shadows. My dark backgrounds consist of a sheet of black paper, such as comes around photographic plates. This produces a most interesting effect; the grain of the paper shows up strongly, with the result that the insect appears to be standing on a bit of black soil.

As regards equipment, all that is necessary is a camera with a long bellows-extension and a good lens. For all my work I use an imported pocket-camera known as the Ica Ideal. It takes pictures 2½ x 3½ inches, and is provided with an anastigmat lens, F/6.8. The particular model which I use has a bellows-extension of 8½ inches, making it possible to get within four inches of an object. This is an unusually long extension for so small a camera, but every inch of it is needed, for with a shorter bellows this class of work would be out of the question.

Focusing is never done with the bellows themselves. These are always fully extended, and the proper focus is obtained by moving the entire camera back and forth or by moving the chair on which the insect is placed.

Sharp definition is essential in this class of work, because the interest of the picture depends almost entirely upon detail. Now, those who are familiar with optics know that the nearer we approach an object with a photographic lens the more difficult it is to keep every part of the picture in focus. Approach to within four inches of an object and the difficulty becomes still greater. To overcome this the smallest stop with which the camera is provided must be used, for as we reduce the size of the diaphragm the definition increases. I always stop down to F/36.

A slow, fine-grained, orthochromatic plate should be used: slow, to give sufficient contrast; fine-grained, because it will have to be enlarged to an unusual degree; orthochromatic, because many insects are brilliantly colored and the proper color-values must be retained in the finished picture. My favorite plate is Hammer's Slow Orthochromatic. It has an exceptionally fine grain, and seems to have just the right qualities to produce clean, clear, brilliant negatives that will stand almost any degree of enlarging. There are undoubtedly many other makes of plates on the market that will serve the purpose quite as well as the brand that I recommend; but it so happens that I began to use Hammer's plates, and I have found no reason for making a change. Films, whether roll or pack, are useless for this class of work. The grain is too apparent, the contrast and brilliancy insufficient. I do not say this because I wish to depreciate films; for nearly all other purposes they are excellent, and some of my best pictures have been made with films.

In order to save both time and money, I usually make two exposures (getting two insects) on each plate. For the benefit of those who wish to do likewise I shall explain the *modus operandi*. Before inserting my plateholder I place in the back of the camera a piece of black paper, of such a size and shape that it will shield the lower half of the plate. Focusing is then done on that part of the ground-glass which corresponds with the upper half of the plate, the plateholder is inserted and the exposure is made — insect No. 1. I next remove the black paper, and having focused on the lower part of the ground-glass, I again insert my plateholder, pull the slide out half way and make my second exposure — insect No. 2. Needless to say, the slide itself serves as a protection for the upper part of the plate.

The time of exposure naturally varies. I always do my work by a north window, and I prefer to make the exposure when the sun is bright, although I never photograph in direct sunlight. The average time of exposure is 1½ minutes, with the camera about three feet from the window.

I develop by the tank-method, as this seems to give me brilliant negatives free of a trace of fog. I use pyro developer at 65 degrees and develop for 25 minutes. My formula for a 40-ounce tank is as follows:

Sodium sulphite, anhydrous	97	grains
Sodium carbonate, anhydrous	34	grains
Pyro	22	grains
Water	40	ounces

If the plates are not absolutely clear I add 10 drops of a 10-percent solution of potassium bromide.

The success of the final picture depends to a very great extent upon a suitable paper. I have tried numerous kinds, and find that the new Enlarging Cyko pleases me best. This paper gives rich blacks and clean highlights, whereas bromide papers give grayish blacks. The Cyko paper has plenty of latitude, and can be forced not a little in the developer without causing the print to fog.

* * *

ALL art, to be of any value, must contain the element of surprise. The element of surprise may consist of any unexpected incident, even so slight as the sudden change in direction of a line. There must be something in the picture which would not be expected from the rest of it, thus affording the spectator a slight shock. If the shock is too great the result will be unpleasant, but without any it will be merely pretty, and such pictures have no lasting value.—PAUL LEWIS ANDERSON, in *Pictorial Landscape-Photography*.

WINGED TERMITE

TERMITE SOLDIER

Duplicating Negatives

REV. A. E. MURRAY

EVERY photographer suffers now and then from the accidental destruction of a favorite negative. Either it gets scratched, or splashed by a few drops of hypo-solution, and so ruined; or perhaps, on account of damp weather, it becomes stained from P.O.P.; or, if a glass plate, it slips out of the hand onto the floor and is broken to pieces. On one occasion the writer remembers seeing a celluloid film, caught by the draught from a suddenly opened door, glide gracefully into the fire, which was eight or ten feet away. Needless to say, it was instantly destroyed, and there was never a chance of saving it.

It may seem strange that it is almost always the best negatives that suffer in this way; but this is easily explained by the fact that it is the good ones that are constantly being used, whilst the poorer ones are left safely packed away in their boxes.

Reasons for Duplication

There are two reasons why it is advisable to duplicate any negatives upon which much value is placed. The first reason is simply that we may not incur serious loss if the original negative should become destroyed. The second reason will appeal with special force to those who go in for enlarging; for, as all photographers discover, a negative which gives a first-rate contact print in, say, carbon or platinum, produces a hopeless "soot-and-whitewash" enlargement. It is, however, not only possible but quite easy to make a second negative from the original one, which, by reason of its softer contrasts, will quite naturally produce a perfect enlargement.

Let us first take the case where it is required to reproduce identically a valuable negative. It is *possible* to make a negative direct from a negative; but, in the hands of most people, the process is so uncertain that (except for experimental purposes) it had better be left alone. It is altogether preferable to make a positive, and from this to print a second negative. The positive may be made either by contact in a printing-frame or by reduction. The former will probably be found the easier way by the beginner. Place the original negative in a printing-frame, and on it (in the darkroom, of course) a *slow* non-orthochromatic plate, and expose. I do not venture to hint what length the exposure should be, because I honestly believe that in this case, as in so many others, "one man's meat is another man's poison," and advice on this subject is apt to be most misleading. It is, however, quite easy to find out the exposure that gives the desired result if the following points are observed. Always use the same plate, the same illuminant and the same developer; always place the printing-frame at the same distance from the illuminant. Two feet from a "fish-tail" gas-burner (or four feet from an incandescent gas-mantle) will perhaps be found a good distance, as exposure will not then be unmanageably fast. Develop by the time and temperature method. In this way a positive can easily be made having the same scale of contrast as the negative, and when this has been fixed, washed and dried a new negative is made from it, which should be identical with the original one.

It is a simple process, but it is, nevertheless, possible to fail in it if care is not taken to work methodically. Any haphazard guessing at either exposure or development is almost certain to lead to poor results. The time of development is settled beforehand, and can be ascertained. Messrs. Burroughs and Wellcome publish in the "Wellcome Exposure-Record" a list of development-times for all their "Tabloid" developers. This leaves only one varying factor to be settled — the exposure. If this is at fault on the first trial, it will be noticed at once by the density of the plate, since, as development is always for a fixed time, whatever the exposure, over- and underexposure will be marked by over- and underdensity.

Improving on the Original

So much for reproducing a negative without altering the scale of contrasts. Should the second negative, however, be desired either less contrasty or pluckier than the original, this may easily be accomplished. When the result is required to be less plucky than the original, the time of development, both for the positive and the second negative, should be *slightly* shortened. A very little makes all the difference. Do not on any account alter the exposure, which should remain constant.

When a pluckier negative is wanted, either of two methods may be adopted:

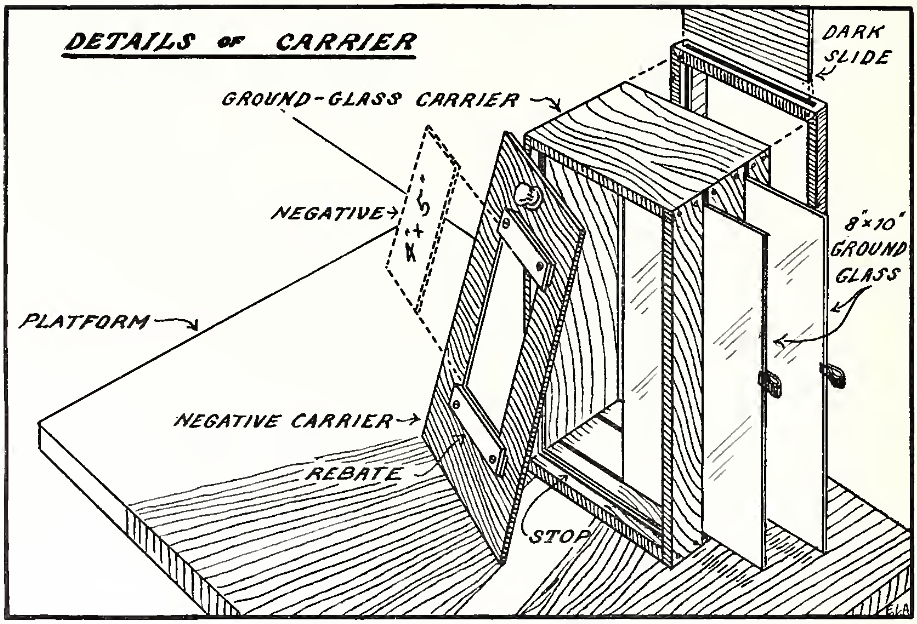
1. Increase the time of development of both positive and negative slightly; or
2. Intensify the second negative.

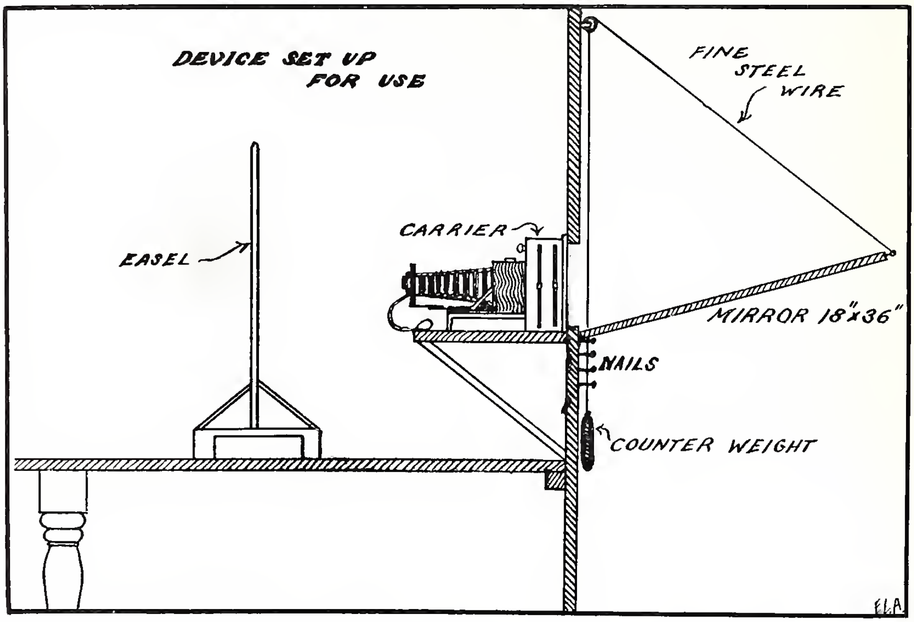
On the whole, I have found the second method the more satisfactory. I have never been troubled by the grain of the plates showing, when using "slow ordinary" plates; but they should invariably be backed, or halation may be very marked by the time the second negative is made.

Few things are more annoying than to lose a valuable negative through one of those trivial accidents that persist in occurring every now and then; and I have more than once had cause to rejoice that I held a favorite negative in duplicate. Of course, I am aware that some workers use the carbon process for duplicating, and that they claim it to be the finest of all ways. But I have not referred to it in this article simply because, in my hands, it gives slower and less satisfactory results than the method I have described.

The Amateur Photographer.

PROFILE-PORTRAIT L. L. HIGGASON





A SUNLIGHT ENLARGING-DEVICE
E. L. AUSTEN

A Sunlight Enlarging-Device

E. L. AUSTEN

THE majority of enlarging-devices, both amateur and professional, use electricity as the illuminant. There is not the least doubt that this light is the best; but for the benefit of "fans" who live in the country, or who are otherwise so situated that electricity is unavailable for them, I venture to describe a device which I have used for several years, and which uses sunlight (not daylight) as the light-source.

The two simple drawings which accompany the text should need little explanation. The dark slide or shutter, which is pushed down during development, and also when one is handling the paper, need not be absolutely light-tight. I keep an old focusing-cloth which I throw over the ground-glass carrier; this excludes the light sufficiently for manipulating bromide papers. I have not marked on the drawings the number of inches which one should separate the ground-glasses, because the distance need not be accurate — two inches is ample; one and one-half will be enough between the negative and the ground-glass. Of course, when a fixed-focus enlarger is used, the negative carrier is removed entirely. The nails for supporting the mirror at different angles should have small heads, so as not to scratch the back of the mirror. It is also important that the wire used for hanging the mirror should be fine. Ordinary picture-wire will serve; but a smaller wire will be better, if it can be procured. This is because at certain hours of the day the sun casts a shadow of the wire on the mirror, which reflects it on the ground-glass, so that if a coarse wire or cord be used uneven lighting of the negative is likely to result. It may seem that the mirror and ground-glasses are unnecessarily large. But if smaller sheets of ground-glass be used, it will be found that the light falls away about the margins of the negative when projected. Uneven lighting will also result if less than two ground-glasses be used, due to insufficient diffusion of a comparatively small light-source. As for the mirror, when the sun is low, as in winter, or late in the day in summer, it must be placed as shown in the lower drawing, in which position, of course, it reflects a squat image, no longer than the ground-glass. A smaller mirror could be used only when the sun is high.

The advantages of this method of enlarging are great power of light in combination with softness and coolness — although the negative gets hot on very clear summer days — speed and ease of focusing the image on the easel. Bromide paper, average negative 4 x 5 to 8 x 10, lens stopped to U. S. 128, on a bright day, will require from 10 to 20 seconds' exposure. It is thus easily seen that the use of gaslight papers is entirely practical; especially with an anastigmat used at wide aperture. The disadvantage of this device is that one can, of course, enlarge only on clear days; that it can be installed only on a building having a southeastern to southwestern (the latter is preferable) exposure, open, during the hours of 10 A.M. to 3 P.M., to an unobstructed view of the sky; and that the mirror must be adjusted about every half hour, in order that the sun's image may be reflected directly against the ground-glasses. But these disadvantages, formidable as they sound, are offset by the fact that the apparatus is eminently superior to daylight or acetylene, which illuminants are usually recommended to those unable to use electricity. And it is for this last class of amateurs that I am writing.

There is one advantage that I forgot to mention — although such a detail may be unimportant in the hopeless case of the headstrong, confirmed "photo-fan" — and that is that Old Sol charges nothing for his services.

A Few Hints on Construction

A ball-and-socket hinge may be substituted for the rather clumsy device of the row of nails.

Use screws instead of nails in constructing the carrier.

If preferred, the carrier can be so made as to admit three sheets of ground-glass, insuring more perfect diffusion on very brilliant days. Two, however, will usually be sufficient, especially when one's negatives have been made by that sort of shutter which lights the plate in the center more than around the margins.

Blue cloth, instead of paper, straps to the ground-glass sheets; be careful that the straps do not cast a shadow on the negative, which may happen if they are glued too far in.

* * *

A GREAT artist is often too much disposed to see everything under the ideal form of beauty. For him even evil has its æsthetic seductions. The cruelty of things and of men is transformed under his pen in dramas which make one tremble, but which enchant one.—*G. Hérelle.*

EDITORIAL

Photography Determines the Authorship of Famous Portraits

NOT satisfied with the proof by enlarged photographs of the hands and handkerchief of Elisabeth Bas — the famous portrait by Rembrandt, in the Rijks-Museum at Amsterdam — that the painting was executed by Ferdinand Bol, A. P. Laurie, professor of chemistry at the Royal College of Arts, London, has taken some photo-microscopic photographs of the eye of the old Dutch lady and compared them with similar ones of eyes in certain other Rembrandts. He states that these tests have induced him to believe that the Elisabeth Bas portrait was painted by Rembrandt, although he does not consider this evidence as conclusive. He now invites Dr. Bredius and Dr. Bode, who have already satisfied themselves by photographs of the Bas hands and handkerchief that Rembrandt was not the author of the picture, to try the photo-microscopic method.

But why not give the Roentgen-ray a trial? A radiograph would show the method of application of the pigments as well as their density, and might yield a more satisfactory result towards determining the genuineness of the paintings where authorship is in dispute. An important article which showed by a series of photographs that it was Ferdinand Bol, and not Rembrandt, who painted the celebrated portrait of Elisabeth Bas appeared in Photo-Era for December, 1912.

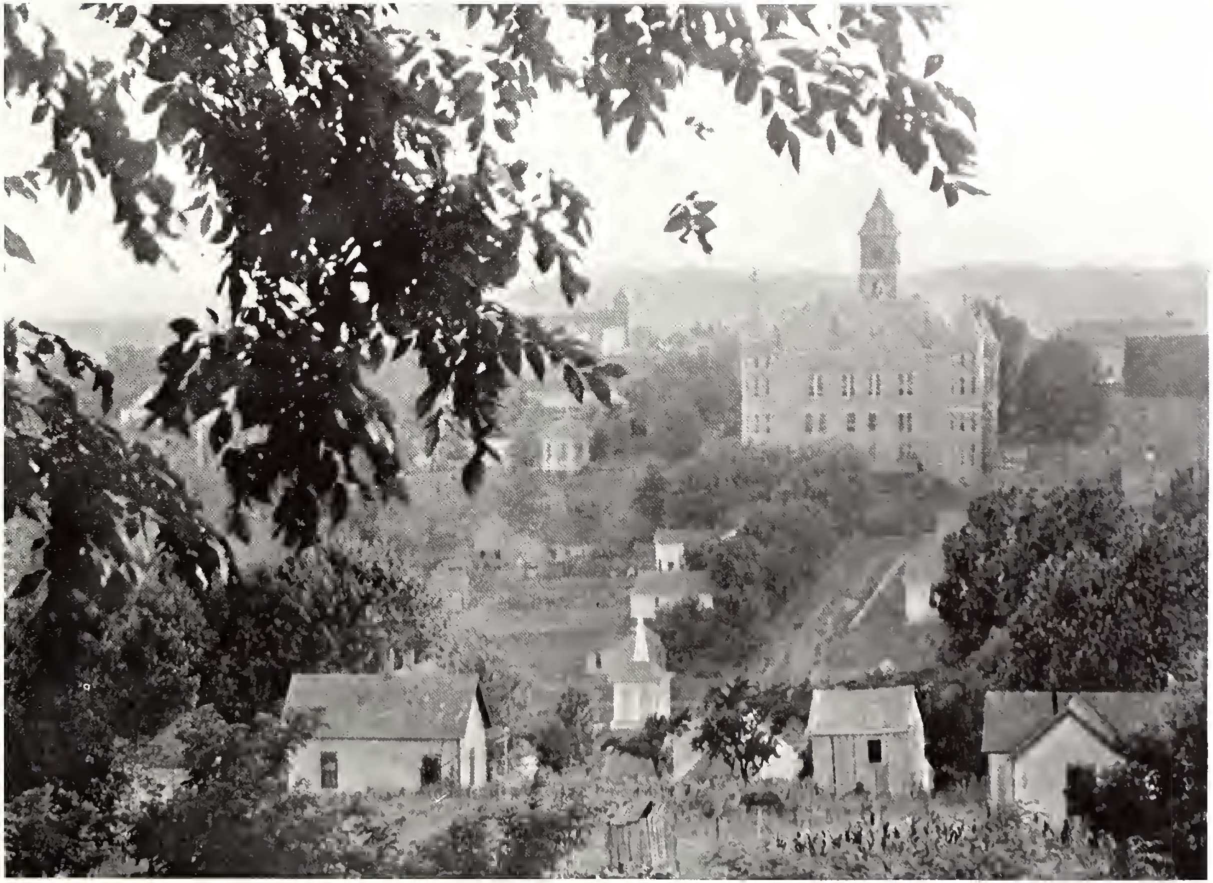
Waste of Time and Material

THE old saying "Haste makes waste" applies with singular propriety to the practice of photography, except that the frequently reckless waste of material — plates, paper and chemicals — in the endeavor to obtain satisfactory results is due more to incompetency than to haste. The inexperienced or impetuous worker is not apt to consider the amount of time consumed in an attempt to correct faulty exposure, nor the cost of the plates that have been wasted by unskilful manipulation of the camera. There is really no need to spend half an hour or more on a plate that can be developed, with good printing-quality, in about ten minutes. Of course, in the case of a number of plates the tank is the best thing to use, and prolonged development is, therefore, expected. But even this method, with its advantages of time-saving, efficiency and convenience, is of no avail, unless the plates — whatever their character of subject — have had, at least, nearly accurate exposure. When the requisite time has elapsed, and the plates have been removed from the fixing-solution, it will probably be found that several plates will be blanks — evidence of extreme underexposure, or no exposure at all — and others will be blackened from extreme overexposure. This spells waste of plates. The cure is obvious.

What is true with regard to the use of plates is true of printing-mediums — gaslight, daylight or enlarging — although sources of artificial light are more constant and reliable than daylight, and, in this respect, the element of loss is minimized. Fortunately, the increasing scarcity of such an indispensable developing-agent as metol may be the means to effect economy in the consumption of dryplates and printing-papers, and this will tend towards accuracy in timing plates and skilful operation of the camera.

A Novelty in Mounting Prints

IT is only by personal trial or by examining successful examples done by others that photographers, especially studio-proprietors, can obtain convincing proof of the merits of the original method of mounting prints described by C. E. Wilkins in January Photo-Era. Several of our friends who have followed Mr. Wilkins' recommendation are delighted with the results. One uses for this purpose a discarded negative that has been thoroughly fixed and washed. Upon this, while the film is still wet, the print is mounted in the usual way. Any standard paste will answer. Should the negative be larger than the print, the superfluous margins may be cut off with a diamond. When an acid fixing-bath has been used, it is well to roughen the edges of the negative with sandpaper or powdered pumice. Prints mounted in this manner keep their shape indefinitely, as warping is entirely out of the question. Furthermore, they have a perfectly even surface, and, as no cover-glass is necessary, there are no reflections; hence they are admirably adapted to display in show-cases — outside or in the studio. It is to be hoped that amateurs will try this method with large-sized prints or enlargements, which really look superb when framed.



THE COURTHOUSE J. H. FIELD

PHOTO-ERA MONTHLY COMPETITION

For Advanced Photographers

Closing the last day of every month. Address all prints to PHOTO-ERA, Monthly Competition, 383 Boylston Street, Boston, U. S. A.

Prizes

First Prize: Value $10.00.
Second Prize: Value $5.00.
Third Prize: Value $2.50.

Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

Prizes may be chosen by the winner, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in PHOTO-ERA, or in books. If preferred, the winner of a first prize may have a solid silver cup, of artistic design, suitably engraved.

Rules

1. This competition is free and open to any camerist desiring to enter.

2. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. ***Subjects which have appeared in other publications are not eligible, nor may duplicate prints be sold, or entered in competition elsewhere, before Photo-Era awards are announced.*** Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

3. *Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data.*

4. *Each print entered must bear the maker's name, address, the title of the picture and the name and month of the competition, and should be accompanied by a letter,* SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what competition it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA, unless otherwise requested by the contestant. If suitable, they will be published in PHOTO-ERA, full credit in each case being given to the maker.

6. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15, unless they are packed with *double thicknesses of* ***stiff*** *corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express very cheaply and with indemnity against loss.

7. The prints winning prizes or Honorable Mention in the twelve successive competitions of every year constitute a circulating collection which will be sent for public exhibition to camera-clubs, art-clubs and educational institutions throughout the country. The only charge is prepayment of expressage to the next destination on the route-list. This collection is every year of rare beauty and exceptional educational value.

Awards — Night-Pictures

Closed January 31, 1916

First Prize: W. H. Rabe.
Second Prize: Lawrence Baker.
Third Prize: William S. Davis.

Honorable Mention: W. R. Bradford, Thos. Elsum, H. A. Erickson, F. Flannery, Mrs. C. B. Fletcher, J. W. Greenwood, Suisai Itow, F. W. Kent, T. W. Kilmer, M.D., E. D. Leppert, Alexander Murray, L. A. Olsen, M. J. Schubert, R. W. Stevens, Elliott Hughes Wendell.

Special commendation is due the following workers for meritorious prints: Beatrice B. Bell, Clifford L. Burdick, Allen P. Child, C. A. Crankshaw, M. A. M. Creary, B. M. DeCou, J. H. Field, Karl Fichtner, Pollux Hein, Edward C. Holden, Henrietta Hudson, William Ludlum, Jr., John A. Madar, James P. Martin, Sydney R. McCoy, Albert Nyquist, J. P. Rigby, Jay Satterlee, Miriam Sheldon, S. A. Shoup, S. S. Skolfield, Kanematsu Sugiura, Edward B. Thompson, Alice Willis.

Subjects for Competition

"Home-Portraits." Closes March 31.
"Subject for PHOTO-ERA Cover." Closes April 30.
"Miscellaneous." Closes May 31.
"Speed-Pictures." Closes June 30.
"Nature-Study Subjects." Closes July 31.
"Figures in Landscape." Closes August 31.
"Field and Wood." Closes September 30.
"Marines." Closes October 31.
"Camp-Scenes." Closes November 30.
"Flashlights." Closes December 31.

Photo-Era Prize-Cup

IN deference to the wishes of prize-winners, the Publisher will give them the choice of photographic supplies to the full amount of the First Prize ($10.00), or a solid silver cup of artistic and original design, suitably inscribed, as shown in the accompanying illustration.

Miscellaneous — Photo-Era Competition Closes May 31, 1916

Some time has passed since we have had a topic for the monthly contest which leaves it to the contestant to choose his subject with entire freedom. There are always some prints that do not quite fit into any particular contest, but that seem to their makers to have prize-winning qualities. Then there may be prints that were worked out for some particular contest, but were overtaken by the closing-date and did not get entered. This is the golden opportunity for all such!

Perhaps it is some portrait that tells enough of a story to make it almost or quite a genre; possibly some landscape has figures of sufficient size so that it is hardly pure landscape, but more nearly "landscape with figures;" or in some way a favorite print has seemed to elude classification under any of the specific heads given as subjects in recent competitions. Now is the time to bring forward any such prints and, having given them the best presentation possible, see what the judges will have to say of them.

This matter of the best presentation is one that demands our best critical judgment as well as our best technical ability; for a print may be technically faultless and yet fail to make the right impression on the beholder, while a print which in reality is faulty on the technical side may be full of poetry and mystery, gaining and holding the interest which the merely literal and technical print could never for a moment arouse.

This is not to say that all technically correct prints are bad, or that a print is good simply because it fails of technical perfection. It simply wishes to suggest that technique is not all there is to photography. The purists in photography will still contend for the "straight print from a straight negative," whereas others claim the right to do any work on plate or print which will help to convey to the beholder the vision that was his in making the production. The "middle course," wherein safety lies, seems to be that work on the negative is permissible, but very little should be done on the print. Many times a plate that was exposed with great expectations and that is good pictorially — that is, in composition and poetic feeling — fails to come up to our standard technically, is too thin and prints unsatisfactorily, or is too strong in contrasts, too literal, or for some other reason is a disappointment, and is laid one side as a failure.

Often, with proper treatment, such plates can be made to yield a good result. If the whole plate is too thin, possibly intensification is what it needs; but if it is some particular thing that you wish to bring out, different treatment is called for. Perhaps the view was of a winding path through a wood or meadow, and the path, which was to have been the center of interest, has been lost in the negative and is hardly distinguishable. Even a seemingly hopeless plate can be saved by some such method as this: with oil-paint and a finger-tip, a bit of old linen or velvet, work up the path on the glass side of the plate until it prints out satisfactorily. A mixture of flake white and ivory black and raw sienna makes a good color to use, and a little experimenting will tell you when the right density is reached. If the rest of the plate is lacking in contrast the paint can be used to strengthen highlights in foliage or foreground. The medium should not be applied in too microscopic a manner, but in broad touches, not too dense. If the case is a very bad one, and it is desirable to darken the shadows also, a glass positive should be made by contact. On this positive the shadows can be brought out in the same manner that the highlights were strengthened in the negative, and then a second negative made in the same way as the positive. This treatment should bring good results from the poorest negative, as work can be done on all three plates if necessary.

If the fault is one of too great contrast it is rather harder to remedy, but if there is detail in the shadows local reduction should remedy the trouble. Sometimes the ground-glass varnish method is all that is necessary. The back of the plate having been flowed with matte varnish, it is scraped away from the lights, and the shadows held back with graphite, applied with a stump. By some of these methods a satisfactory print should result from the seeming failure.

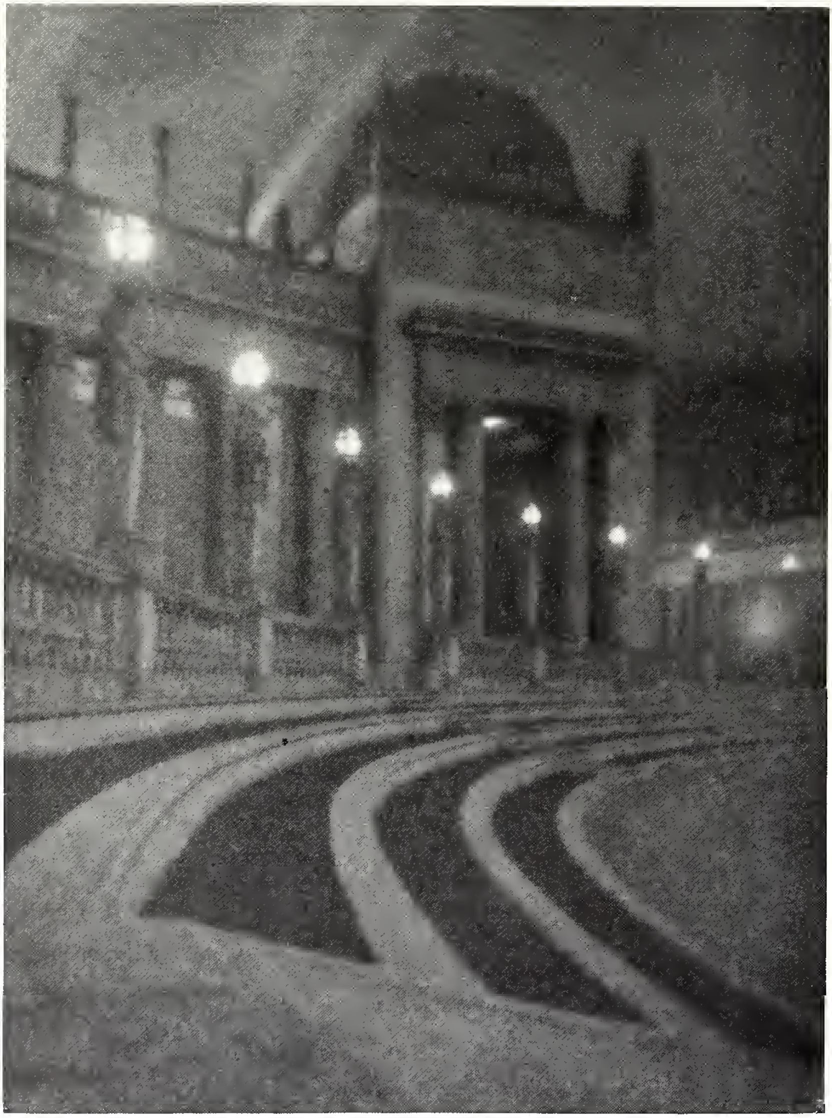
The choice of a proper printing-medium is a large factor in the success of the effort. It requires not a little artistic feeling and a well-developed sense of the fitness of things to choose the best means of interpreting to the public the beautiful conception that was in one's own mind when the exposure was made. Because a certain grade and surface of paper has given us pleasing results with some plates is no indication that that same paper is suitable for any and all subjects. The flower-study that depends for its beauty on delicacy and fineness of detail and texture is best rendered by a smooth-surfaced paper, possibly one with a slight gloss; and not infrequently a green tone is pleasing, especially when the blossoms are white. Eastman's Velvet Green should be a very satisfactory medium for such subjects.

Such treatment, however, would be the opposite of what should be given to studies where breadth and mass are the predominant characteristics. For such studies a rough-surfaced paper is preferable and the color should be carefully chosen. For snow-scenes a gray platinum is appropriate, whereas for sunsets or autumn-subjects the warmer sepia-tones are preferable.

If one wishes to get away from the ordinary colors and printing-mediums, of course the carbon or the simpler ozobrome offers endless possibilities. The ozobrome process is not only simple to work, but, by using the developing-paper print as a base, good prints are possible from negatives that would be useless for carbon prints by the direct printing-process. By either method almost any desired color can be had. The daintiness of a snow-scene or sea-view may be greatly enhanced by a print in blue, although for some seascapes a soft green is preferable. The summer foliage also lends itself to shades of green, and for sunsets or firelight-effects the deep reds are appropriate. A chalk-red is sometimes used for figure-studies, preferably large heads; but do not use blue or green on the human countenance unless you desire to produce a ghostly or cadaverous effect.

Of course it is understood by all contestants that no mere "record" stands any chance in the Photo-Era contests. A print must have pictorial qualities; must have a message to bring — of beauty, of poetry, of mystery — something which makes it more than a record of "things as they are." The quality is one that is hard to define. It may be a charming subject; but it is by no means always a matter of subject, for some of the most ordinary and commonplace, even intrinsically ugly, subjects may be so transformed by the infusion of poetic sentiment or human feeling that they become inspiring and beautiful — even as the plainest face becomes transfigured and beautiful when moulded by deep emotions of love, courage, heroism, renunciation.

It may be a matter of the treatment of the subject; but it is not any one treatment that produces invariably the desired result, for the treatment may



COURT OF THE UNIVERSE, PANAMA-PACIFIC EXPOSITION
FIRST PRIZE — NIGHT-PICTURES
W. H. RABE

SECOND PRIZE
NIGHT-PICTURES

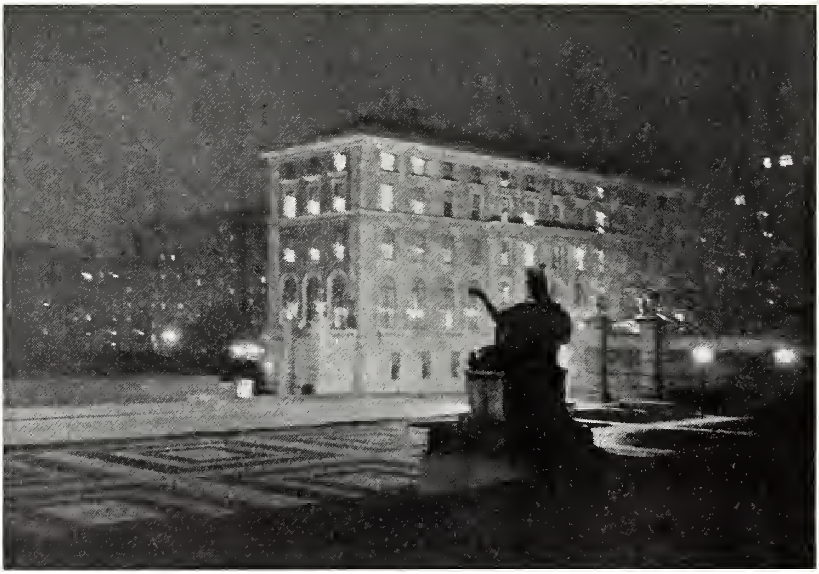
EVENING BY THE CAMP-FIRE LAWRENCE BAKER

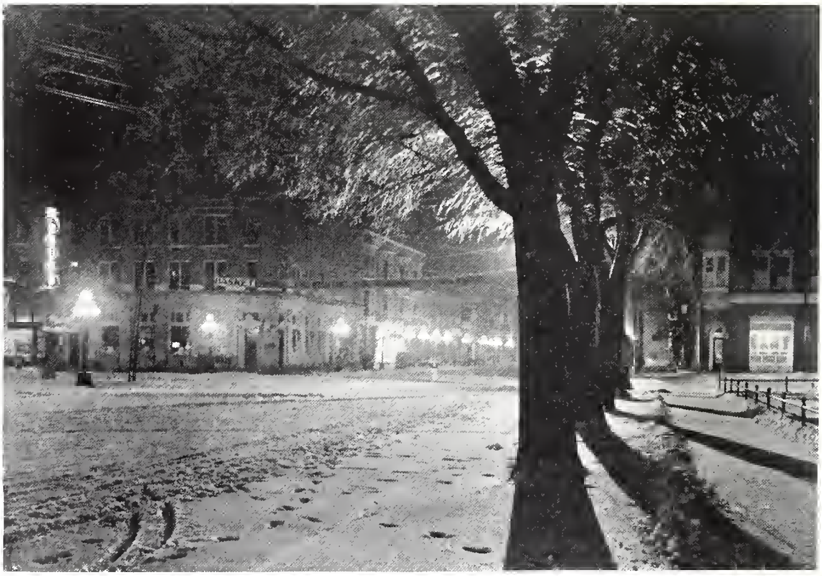
vary as much as the subject and yet the pictorial value be unvarying. Perhaps it is the expression of individuality, the ability to make visible to other eyes than our own the inner impression of beauty produced in the mind by the objects before our camera.

Possibly the technical artist — and that is no contradiction in terms — would say it is a knowledge of the laws of composition, perspective, balance, etc. It is not unlikely that the secret lies in a combination of all these, for one must have technical knowledge in order to be able to express the inner vision; but if he have no inner vision to express, all his technique goes for nothing. Katherine Bingham.

Intensifying Self-Toning P. O. P.

It is of course well known that we can modulate the final color of a self-toning P.O.P. print by a preliminary bath of salty water and so forth. But this command of color-range is not very great, so that any additional arrow to our quiver may be useful. Here is a method which I have tried on a self-toned print which was put straight into the hypo. This print was when dry of a somewhat, but by no means an objectionable, red color. The print was put into a chromium bath similar to that used for bleaching and redevelopment of negatives with a view to intensification. The following is a convenient stock-solution which keeps indefinitely: Saturated solution, practically a 10-percent solution of potassium bichromate, 2 ounces; hydrochloric acid 1 dram. To make a bleaching-bath for negatives take 100 minims of this stock-solution and add water to 1 ounce. For prints I advise only half this strength; this acts slowly and gives a duller streaky-looking, half-washed-out effect; but given time enough — from 5 to 10 minutes — the result is uniform. The print being partly gold is only partly bleached or lightened. It must be washed till all yellowness is entirely removed from the paper. The white rebate-margins of the print guide us in this respect. It is then redeveloped by any alkaline developer. Contrary to general notions, alkaline pyro is quite effective and gives a cool, slightly chocolate-brown color, considerably less red than the original state or color of the print.—E. D. B., in *The Amateur Photographer*.





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T. W. KILMER, M.D.
WINTER-NIGHT
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HONORABLE MENTION — NIGHT-PICTURES

THE CRUCIBLE

A MONTHLY DIGEST OF PRACTICAL FACTS FOR PHOTOGRAPHIC WORKERS

With Reviews of Foreign Magazines, Progress and Investigation

Edited by PHIL M. RILEY

Readers are encouraged to contribute their favorite methods for publication in this department
Address all such communications to The Crucible, PHOTO-ERA, 383 Boylston Street, Boston, U. S. A.

The Treatment of Old Lenses

Uncementing and cleaning old lenses which have become clouded between the elements should be intrusted to a reliable optician, or, preferably, the manufacturer of the lens, rather than attempted by the novice. Optical glass is somewhat softer than ordinary glass and is easily scratched. Then, too, the adjustment of the best anastigmat lenses is very delicate; once the glasses composing the front and back elements have been taken apart it is often difficult to get them together again and ensure proper centering.

The necessity for cleaning the outside surfaces of a lens may be obviated to a great extent by keeping the lens capped, both front and back, when not in use, dusting occasionally with a camel-hair brush, and wiping lightly with a soft silk or linen handkerchief. If the surface still appears cloudy a single drop of pure grain alcohol may be put on each of the surfaces, which should then be wiped until quite dry. The spirit must not be allowed to run between the lens and its brass cell nor to remove the dead black coating from the cell. Dr. Miethe recommends as the best means of cleaning the edge of the lens in contact with the cell the use of a pointed bit of soft wood, such as the pith of the rush or elder, over which a soft cloth is stretched.

Never use acid or other strong fluid on your lens or it will be ruined. A lens that has become scratched or dulled by surface oxidation, due to exposure to the air for many years, so that there is an iridescent reflection from the glass surface, should be sent to the manufacturer for repolishing.

The usual method of uncementing a lens is to remove the front and back elements from the cell, place them one at a time in a glass dish and pour in warm water. Keep the water warm by means of a spirit-lamp until the glasses can be slid apart. Should this fail, soak in turpentine.

The cementing together of lens-glasses is far more difficult. Canada balsam is the medium used, and it must be specially prepared for the purpose. Put the balsam as it is procured of the druggist or photo-supply dealer into a saucer and bake it in an oven until, when cold, it will be hard. Then break it up, place in a bottle containing enough benzene to cover it and allow to stand for twenty-four hours. Then heat gently over a water-bath until fluid, when it is ready for use.

Clean the lens-glasses with the utmost care, warm gently and place a drop of the warm balsam in the center of the concave glass. Press the convex glass down into the concavity until the balsam spreads and oozes out at the edges, when the lens may be laid in a suitable place for the balsam to harden. This action will be hastened by gentle heating in an oven with the door open. After a few days any surplus balsam may be removed from the edge of the lens with a rag moistened with benzene.

Hypo-Alum Toning of Cyko

Although the Cyko Manual features redevelopment, double redevelopment and gold toning as methods for the production of warm tones on black prints — sepia, brown and red chalk — and omits the methods of hypo-alum toning given in the Professional Cyko Pointer, I have found that these latter methods and one which I have used for many gaslight papers are especially well suited to Cyko paper, particularly in portraiture, both on Professional Cyko or any other grade of buff stock. The tone is a rich, medium chocolate brown without a trace of the unpleasant yellow or red characteristics of most redeveloped prints. Double redevelopment is intended to remedy this, but it seems to me that the hypo-alum method is simpler.

Prepare the following solution:

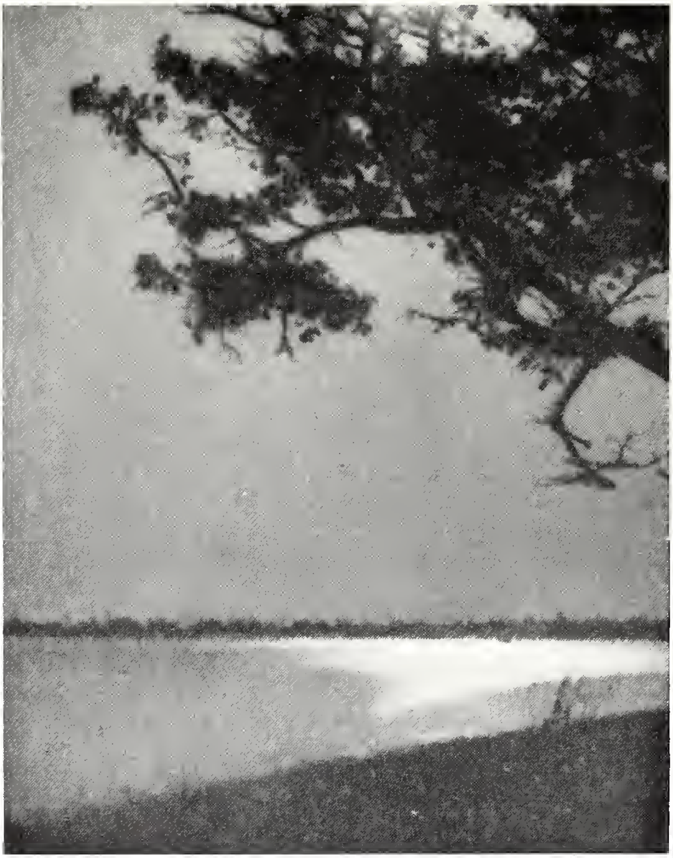
Hypo	2½	ounces
Powdered alum	½	ounce
Granulated sugar	½	ounce
Boiling water, to make	20	ounces

First dissolve the hypo, then add the alum slowly and finally the sugar. The solution will be milk white, and a sediment should form at the bottom of the bottle; but do not filter it. Heat the bath two or three times to 120°, allowing it to cool between times in order to ripen it and prevent uneven toning or bleaching. As the bath may be used over and over again, and as it works more evenly and gives a richer tone with age, it is customary, when possible, to ripen a new bath by adding one part of old to four parts of new.

The fixed black prints to be toned should be placed in an agate-ware pan of the bath when cold, and heated over a gas-burner to about 110° to 120° for about fifteen minutes, keeping the prints in motion meanwhile by handling, to ensure even action. When the desired tone is reached remove the heat and allow the prints to remain in the solution until it becomes tepid or cold before thorough washing, after which they are considered quite permanent, the image consisting of silver sulphide. The time required for the solution to cool is less than might upon casual thought be supposed, because the shallow solution has a surface of considerable area exposed to the air. To remove the prints direct from the hot bath to the cold wash-water would be very likely to cause a sudden contraction of the gelatine, which would imprison the finely divided particles of sulphur and make its removal very difficult. To facilitate the removal of this precipitate, use the following solution:

Nitric acid	1	ounce
Water	60	ounces

Take the prints from the toning-bath and place them face downward in a large tray of this solution and allow them to remain for five minutes, then sponge them off, rinse in water and finally wash for half an hour in running water.



THIRD PRIZE
NIGHT-PICTURES

MOONLIGHT SHEEN — WILLIAM S. DAVIS

Fixing and Washing Roll-Films

To those who develop any quantity of roll-films, a simple and convenient method of preventing the films from curling whilst fixing and washing, without the need of continually watching them, may prove of great service.

Here is the method I employ. For fixing and washing I use deep porcelain dishes, size 12 x 15. This sized dish will take nearly all films of the popular sizes of folding pocket-cameras, but smaller dishes may be used to meet individual requirements.

After developing — which I do by hand — the film is washed in a dish of clean water and the clips released. The two ends of the film are brought together, so that the sensitized side is facing outwards. This will form a loop between the third and fourth exposure (six-exposure reel). Note these exposures, and along the space between them gently squeeze the film so that a flat edge is formed, the exposures coming back to back flatly.

Adjust the ends of film whilst holding exposures Nos. 3 and 4 firmly, so that 2 and 5, and 1 and 6, lie evenly against each other.

When this is done, grasp the ends firmly and release what was previously the center. Pin the ends together on the blank unexposed portion. The tendency of the film to curl outwards is thus counterbalanced, and the film lies firm and flat, which ensures, with a little periodical attention during fixing, thorough fixation, and a minimum of trouble whilst washing.

Twelve-exposure films are dealt with in sixes; with eight-exposure films (V. P. K.) the fourth and fifth exposures become the center, and larger-sized films are dealt with, cut in fours or twos.—A. L. R., in *The British Journal of Photography.*

Keeping Solutions

Those who are in the habit of putting their solutions back into the bottle for future use will find that the solutions will keep much better if they are allowed to run down the inside of the bottle instead of being poured in after the usual manner, so that they splash and become aerated.

Bottles should always be filled right up to the cork, so that there can be no air between the cork and the solution. If there is not sufficient solution to do this, and it is not desired to add any more water, a number of glass marbles may be dropped into the bottle until the solution has reached the desired height.

Alfred I. Tooke.

❧

Great artists are good critics.—*Alfred Stevens.*

THE ROUND ROBIN GUILD MONTHLY COMPETITION

For Beginners Only

Closing the last day of every month. Address all prints to PHOTO-ERA, Round Robin Guild Competition, 383 Boylston Street, Boston, U. S. A.

Restrictions

All Guild members are eligible in these competitions provided they never have received a prize from Photo-Era other than in the Beginners' Class. Any one who has received only Honorable Mention in the Photo-Era Monthly Competition for advanced workers still remains eligible in the Round Robin Guild Monthly Competition for beginners; but upon winning a prize in the Advanced Class, one cannot again participate in the Beginners' Class. Of course, beginners are at liberty to enter the Advanced Class whenever they so desire.

Prizes

First Prize: Value $5.00.
Second Prize: Value $2.50.
Third Prize: Value $1.50.
Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

A certificate of award, printed on parchment paper, will be sent on request.

Subject for each contest is ***"Miscellaneous"***; but only original prints are desired.

Prizes, chosen by the winner, will be awarded in photographic materials sold by any dealer or manufacturer who advertises in Photo-Era, or in books.

Rules

1. These competitions are free and open to all members of the Round Robin Guild. Membership is free to all subscribers; also to regular purchasers of Photo-Era on receipt of their name and address, for registration, and that of their dealer.

2. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. ***Subjects which have appeared in other publications are not eligible, nor may duplicate prints be sold, or entered in competition elsewhere, before Photo-Era awards are announced.*** Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

3. *Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data.* ***Criticism on request.***

4. *Each print entered must bear the maker's name, address, Guild-number, the title of the picture and the name and month of the competition, and should be accompanied by a letter,* SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what contest it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of Photo-Era, unless otherwise requested by the contestant. If suitable, they will be published in Photo-Era, full credit being given.

6. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15, unless they are packed with *double thicknesses of **stiff** corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express very cheaply and with indemnity against loss.

Awards — Beginners' Contest

Closed January 31, 1916

First Prize: Margaret Anderson.
Second Prize: R. W. Stevens.
Third Prize: Louis F. Bucher.
Honorable Mention: James Allan, J. Louis Cunningham, Martha Curry, B. S. Grenelle, Mary E. B. Gruneudike, F. J. F. Marty, O. J. Moore, C. A. Pierce, W. Stelcik, M. C. Still, G. S. Tagaya, F. N. Whitman, Wm. J. Wilson.

Special commendation is due the following workers for meritorious prints: Marguerite Balthrope, James G. Bonar, Lamar Callicott, Ralph D. Count, Eva L. Eden, Howard D. Lafayette, Warren R. Laity, Hubert C. Mohr, Mrs. H. G. Reed, John H. Smithers, A. J. Voorhees, Rev. Paulus W. Weber, Jos. G. Whetson.

Why Every Beginner Should Compete

The trouble with most competitions is that they place the beginner at a disadvantage. If advanced workers be allowed to compete, beginners have little chance to win prizes, and so quickly lose interest after a few trials.

There are two monthly competitions in which prints may be entered with prizes commensurate with the value of the subjects likely to be entered. They are: The Round Robin Guild Competition and the Photo-Era Competition. The former is the better one for a beginner to enter first, though he may, whenever it pleases him, participate in the latter.

As soon as one has been awarded a prize in the Photo-Era Competition, he may consider himself an advanced worker, so far as Photo-Era records are concerned, and after that time, naturally, he will not care to be announced as the winner of a prize in the Beginners' Class, but will prefer always to compete in the Photo-Era Competition for advanced workers. In accordance with this natural impulse, it has been made a rule by the Publisher that prize-winners in the Advanced Class may not compete in the Beginners' Class.

To measure skill with other beginners tends to maintain interest in the competition every month. Competent judges select the prize-winning prints, and if one does not find his among them there is a good reason. Sending a print which failed to the Guild Editor for criticism will disclose what it was, and if the error be technical rather than artistic, a request to the Guild Editor for suggestions how to avoid the trouble will bring forth expert information. The Round Robin Guild Departments, including those of personal counsel and criticism, form an endless chain of advice and assistance if members will connect the links.

THE ROUND ROBIN GUILD

An Association of Beginners in Photography

Conducted by KATHERINE BINGHAM

This association, conducted under the auspices of PHOTO-ERA, and of which PHOTO-ERA is the official organ, is intended primarily for the benefit of beginners in photography. The aim of the association is to assist photographers by giving them information, advice and criticism in the Guild pages of PHOTO-ERA and by personal correspondence. Membership is free to subscribers and regular purchasers of the magazine sending name and address to PHOTO-ERA, The Round Robin Guild, 383 Boylston Street, Boston, U. S. A.

Spring-Flowers

"Dear common flowers that grow beside the way,
Fringing the dusty road with harmless gold;
First pledge of blithesome May,
. . . . . . thou art more dear to me
Than all the prouder summer-blooms may be."

There is perhaps no time of the year when so many of us "take to the woods" as in the first days of spring, when "the flowers appear on the earth and the time of the singing of birds is come."

The early spring-blooms are very lowly, and consequently harder to photograph than the more "upstanding" flowers of the later year. Of course, they can be plucked and taken home where conditions are more favorable for this portrayal, but it is especially true of these dainty first-comers that their environment and method of growth are a large part of their charm.

If one is to go afield with any hope of bringing back an adequate souvenir of these lovely blossoms, more than the usual equipment will be needed. In the first place the unaided lens of the usual hand-camera includes too wide an angle of view, making the image too small to be adequate. This is easily remedied by the use of the portrait-attachment, which gives admirable results if the directions accompanying it are properly followed. The usual tripod is too high for use in photographing blossoms that keep so close to the bosom of Mother Earth as do most of the early-comers. The camera must be about on a level with the center of the plant, and that necessitates placing it on the ground, or at least not higher than on some rock or stone.

For the accurate measuring of distances when using the portrait-attachment a tape-measure, or measuring-line of some sort, should be carried. It will also be found convenient to have a background to use when necessary. This may be any smooth piece of material of some neutral tone, fastened at the sides to two sticks pointed at the bottom so that they may be stuck into the ground. Of course, one may depend on cutting sticks on the spot, but it is not always easy to fasten the cloth smoothly to them, and it is apt to become wrinkled in carrying if not neatly rolled on the sticks. If a natural background, a rock or clump of taller foliage, can be found, it is much to be preferred to any artificial one; but sometimes, especially if the sun is shining, a confusion of white spots on out-of-focus foliage will be the ruination of our picture unless shut out in some fashion.

Nature's grouping may sometimes be accepted without change, but as a rule she is too lavish with her treasures, and also she is apt to be a bit slovenly about clearing away débris. It is, therefore, wise to go equipped with a pair of scissors, with which superfluous blooms or last year's dead leaves may be removed without disturbing the rest of the group. It is sometimes possible, if a good rock background is available, but the flowers are wrongly placed, to lift a root carefully and place it in the proper location without the rearrangement being apparent in the picture. Care should be taken to have the foliage cover any loose dirt or other sign of things having been tampered with.

The feathery foliage and translucent flowers of the squirrel's corn or Dutchman's breeches are especially charming to photograph, and they are usually found in very well-arranged groups — not crowding together in masses, but in isolated clusters, as if arranged with particular regard for our purposes.

Not so easy to photograph are the smaller flowers of the hepatica, the bloodroot and the violet, or the still more retiring arbutus, that cowers close to the ground, hiding under its thick, leathery leaves as though afraid the still, cool winds would mar its exquisite pink-and-white beauty. Of a less timorous habit, yet still of a very frail loveliness, is the painted trillium, that stands erect and "takes the winds of March with beauty," seeming to scorn her blowsy, dark-robed sister the wake-robin.

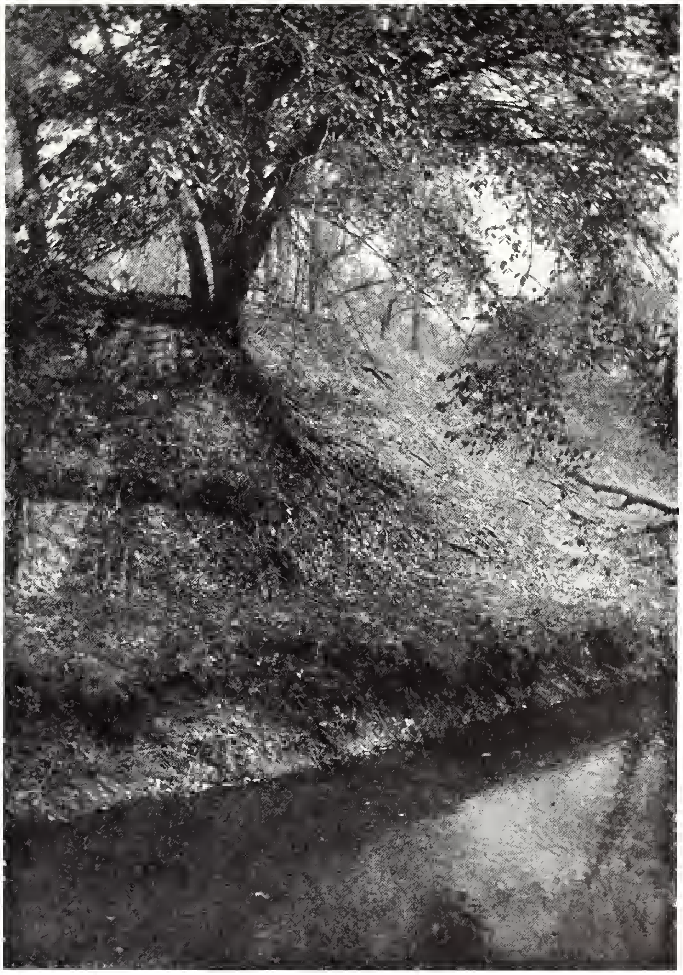
For the taking of the hepatica and her ilk the camera should be placed firmly on the ground at the measured distance, and all intervening leaves or bits of grass or twigs carefully removed. As fineness of detail is a great desideratum in this class of work a smaller opening should be used than the one usually in place, and a very short bulb-exposure given. Its length varies, of course, according to the strength of the light.

The one great thing to avoid when choosing a day to go "a-maying" with one's camera is wind. If the breezes are abroad one will be pretty sure to come blustering about and either keep one waiting an unconscionable length of time or mayhap spoil one's best efforts by stealing up at the strategic moment and causing one's models to nod their heads in gentle acknowledgement of his presence. A day when the sky is overcast will prove fully as satisfactory for this work, as the strong shadows cast in sunlight are often as undesirable in flower-portraits as in human ones. Not infrequently the cloth suggested for a background can be used as a wind-break, or to diffuse the light if the sun is troublesome.

The exposure in sunlight, with stop 16, should be ordinarily about one-half second. Full time should be given, as the nearness to the object lengthens the time necessary, and too short an exposure will not give the delicate detail desirable in both flower and foliage. The time will lengthen if the sky be clouded or the subject in the shade.

Flowers gathered and brought home lose half their beauty when crowded together in a vase, and their

FIRST PRIZE
BEGINNERS' CONTEST



"WHEN THE LEAVES BEGIN TO FALL" MARGARET ANDERSON

life at best is short; but secure a good photograph of them in their native setting and they always live for you with all the charm of the spring-woodland to enhance their beauty.

The Ruby-Lamp in Surgery

THE photographer, in his enforced addiction to the ruby-lamp, is likely soon to have a voluntary associate in the shape of the surgeon; for we learn from a French journal that some surgeons in France now do their operations only under an intense red light. The purpose is not to secure any psychological effect, which might be supposed to follow the use of this color, but simply to enable them to refer from time to time during the operation to the image on the fluorescent screen furnished by X-rays. Were the operation to be carried out in ordinary light, the surgeon's eyes would never be able to adjust themselves quickly enough to the fluoroscope, which requires the observer to sit in semi-darkness for some minutes, in order that his retina may become sufficiently sensitive. With red light, however, it is otherwise; and the illumination is said to be quite ample for operative purposes, although, of course, the tints of many things, notably of blood, are altered. A luminous ceiling of some twenty lamps of twenty-five candle-power is employed, and the light is filtered through ruby-red glass. It is switched off momentarily when the X-ray image is referred to, and by this means the surgeon is enabled to see how closely his instruments are getting to a foreign body, or to follow the various stages in the reduction of a fracture.

The Amateur Photographer.

Mending Celluloid Articles

WHEN a regular cement for celluloid, such as a solution of celluloid in acetone and amyl-acetate, is not obtainable, *Photography and Focus* calls attention to the fact that a broken article can often be mended by making use of the solvent action of glacial acetic acid upon celluloid. A little of the acid should be applied to the broken edges, which are then pressed firmly together and fastened under pressure until hardened.

Answers to Correspondents

Subscribers and regular readers wishing information upon any point in connection with their photographic work are invited to make use of this department. Address all inquiries to Correspondence Department, PHOTO-ERA, *383 Boylston Street, Boston, U. S. A. If a personal reply is desired, a self-addressed, stamped envelope must be enclosed.*

C. M. M.— So far as we know, the most common, and in many ways **the most practical, way to keep solutions cool** for tray-development in hot weather is by the use of ice in a larger tray, in which the tray containing the solution may be placed. Of course, in the case of developers, the adoption of tank-development is one solution of the problem, for once the right temperature is obtained the large volume of solution will hold its temperature with only slight variation for twenty minutes or so.

As to the matter of an ammonia tube for cooling solutions, we took this up with one of the leading firms manufacturing scientific equipment in Boston. The reply is to the effect that any method of keeping the solution cool by means of ammonia would mean the loss of considerable compressed ammonia gas, although the method is feasible if of sufficient importance. The opinion is also expressed that the use of ice would probably prove more satisfactory. If large solutions were involved it might be possible to arrange so that a draft of cool air going over the ice might be drawn through tubes passing through the solution.

Frilling of films is exceedingly unusual except in the case of a few brands which are unusually thin. Most of our American films are backed with an unsensitized coating, which does much to prevent frilling and curling. The use of a fresh acid-alum fixing-bath ought to prevent frilling in the wash-water. If not, a hardener, such as formalin, may be employed at any stage of the work, even after development and previous to fixing, if that seems necessary. The solution should contain 1 ounce of formalin to 20 ounces of water, in which the film should be immersed 15 minutes. Be sure the solution is distinctly alkaline, as neutral and alkaline solutions have very little hardening-effect. Of course, you doubtless realize that a chrome-alum fixing-bath has greater hardening-properties than one containing ordinary alum.

Probably, also, you know of the various hypo-eliminators by means of which long washing in warm water may be avoided. Of them all, potassium permanganate is probably best.

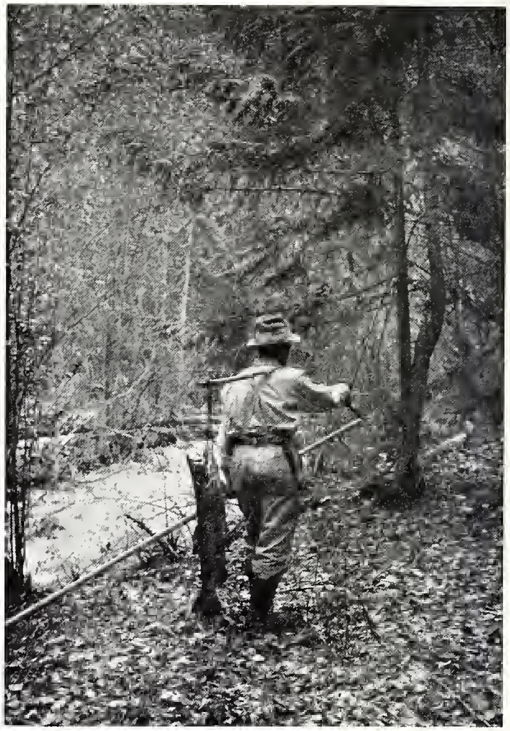
While the regular **film-pack developer** ought to be the best, another good one is the following, a 20-minute solution at 65 degrees. Dissolve the chemicals in the order named in half the quantity of lukewarm water, and then add cold water to the full amount.

Water	46	ounces
Metol	4	grains
Hydroquinone	15½	grains
Sodium sulphite, anhydrous	186	grains
Sodium carbonate, anhydrous	100	grains
Oxalic acid	3	grains
Pyro	19½	grains
Potassium bromide, 10% sol.	22	drops

This is the new Ansco film formula. Should the resulting negatives prove too thin for your purpose, increase the time to 25 or 30 minutes.

E. S.— It is rather difficult to advise you definitely regarding the cause of your **enlargement being gray in the sky and highlights,** because there are so many possible causes. The fact that you have used several brands of bromide papers with similar results, and have obtained excellent gaslight prints from the same negatives, would seem to eliminate all possible causes except two.

You say there is no white light to fog the prints, and very likely that is true; but bromide paper is as rapid and sensitive to light as a slow dryplate and must be handled with the same precautions. It cannot be developed by weak gaslight nor even by the yellow light often employed for gaslight paper work. The ruby-light used for dryplate-development is the only safe light, especially when development is much slower than gaslight paper, and so makes it necessary to expose the print to the ruby-light longer.



A FISH-STORY R. W. STEVENS

SECOND PRIZE — BEGINNERS' CONTEST

This brings us to the other possible reason, which is that the proper time of development of a bromide print will be three or four minutes if properly exposed. The exact exposure is important if good gradation and rich tones are an object, overexposure being a thing to avoid, for it would cause the very trouble you describe. Exposure should be such that the print need not be snatched hastily from the developer in order to save it, but rather may be allowed to develop to the stopping-point beyond which no further change is visible; and at this point the print should be of proper depth. If not, increase or decrease the printing-time as indicated, always developing to the full as a guide.

Print-Criticism

Address all prints for criticism, enclosing return-postage at the rate of one cent for each two ounces or fraction thereof, to Correspondence Department, PHOTO-ERA, *383 Boylston Street, Boston, U. S. A. Prints must bear the maker's name and address, and be accompanied by a letter, sent separately, giving full particulars of date, light, plate or film, stop used, exposure, developer and printing-process.*

A. E. M.—"The Old Folks at Home" appears to present good likenesses of both persons, but unfortunately they do not appear to be looking in quite the same direction. All included in a group should have a common center of interest. The shrub-branches in the foreground, out of focus because of their nearness to the camera, are also unfortunate.

L. L. H.—"10 ft. 7" is an unusually well-composed photograph of the pole-vault — a happy shot. It is not quite sharp enough for enlargement on other than rough paper, but the increased size would lend a better effect of action.

H. B. R.— Unless the negative is too hard, and needed reduction with ammonium persulphate, "Good Morning" would be improved by the use of the softest grade of portrait gaslight paper. The subject is excellent.

H. P.— In several recent issues we have published articles dealing with the subject of halation and the treatment of windows which you might read with interest and profit. In your future work of this sort we suggest that whenever possible you confine yourself to illumination from one window. When two windows are included in the picture-area unity is impossible.

"Meditation" shows distortion of the hand, as is frequently the case when the hand has thoughtlessly been extended toward the camera, particularly when a lens of somewhat short focus has been used.

L. R. M.— The most striking of your contributions to the last competition are the sunsets. One of them, marked E, is probably the best subject you have sent to us. It could have been improved by a little more detail in the foreground; perhaps a softer-working paper would disclose this sufficiently.

Your flower-subject suffers because of the background. Apparently a skin or fabric was hung too near the vase, with the result that its wrinkles show too plainly and reflect strong, confused light.

H. D. P.— Your landscape seems to be devoid of any definite center of interest. It lacks unity because of the equal importance of two prominent trees; apparently the front-board was raised too high, for there is too little foreground and too much sky-area.

J. H. W.—"Valley Green" is an exceptionally good piece of photographic work both technically and in respect to composition. It has a depth of tone, vigor and gradation which, unfortunately, are absent in "Along the Wissahickon." We notice with interest the improved appearance of the child-portrait which at our suggestion you have printed on a softer-working paper.

J. R.— The trouble with your film is that it was not fixed sufficiently. It was taken out of the fixing-bath much too soon. If it had not been exposed to the light, as it has, you could place it in the fixing-bath again and clear it. Now, however, the only way is to make a print and have some clever artist air-brush the lighter parts to darken them sufficiently.

IRENE M. F.— Your portrait of a young girl appears to be considerably out of focus, apparently in order to produce what is known as a "soft-focus" effect. The white costume and the face of the subject are a chalky white. It would be better to have the light properly distributed, the model to be dressed in a dark-hued garment, thus centering the interest upon the face. It is also considered in better taste not to have the coiffure of the model in an extreme style, such as in your case — a patch of hair coming down each side of the forehead and nearly reaching the eyes. Your model, who appears to be sufficiently comely, does not need such a bizarre style of hair-dressing. The pose itself is excellent, and the only good feature of the portrait.

A. H.— Your picture is a carelessly made snapshot, as shown by the numerous objectionable accessories, and without the least evidence of artistic or harmonious composition, although, to be sure, the expression of the face of the aged lady has been caught successfully. The photograph has, therefore, only a sentimental value, and would scarcely interest a person who does not know the subject of your snapshot.

OVER THE HILL LOUIS F. BUCHER

THIRD PRIZE — BEGINNERS' CONTEST

Photo-Era Exposure-Guide

Calculated to give Full Shadow-Detail, at Sea-Level, 42° N. Lat.
For altitudes up to 5000 feet no change need be made. From 5000 to 8000 feet take ¾ of the time in the table. From 8000 to 12000 feet use ½ of the exposure in the table.

Exposure for average landscapes with light foreground, river-scenes, light-colored buildings, monuments, snow-scenes with trees in foreground. For use with Class 1 plates, stop F/8, or U. S. 4. For other plates, or stops, see the tables on the opposite page.

*These figures must be increased up to five times if the light is inclined to be yellow or red.
†Latitude 60° N. multiply by 3; 55° × 2; 52° × 2; 30° × ¾.
‡Latitude 60° N. multiply by 2; 55° × 2; 52° × 1½; 30° × ¾.
¶Latitude 60° N. multiply by 1¼; 55° × 1; 52° × 1; 30° × ½.
§Latitude 60° N. multiply by 1¼; 55° × 1; 52° × 1; 30° × ½.

	MONTH AND WEATHER																			
	JAN., NOV., DEC. †					FEB., OCT. ‡					MAR., APR., AUG., SEPT. ¶					MAY, JUNE, JULY §				
HOUR	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull
11 A.M. to 1 P.M.	1/32	1/16	1/8	1/4	1/2	1/32	1/16	1/8	1/4	1/2	1/50	1/25	1/12	1/6	1/3	1/60	1/30	1/15	1/8	1/4
10-11 A.M. and 1-2 P.M.	1/25	1/12	1/6	1/3	2/3	1/25	1/12	1/6	1/3	2/3	1/40	1/20	1/10	1/5	1/2	1/60	1/30	1/15	1/8	1/4
9–10 A.M. and 2–3 P.M.	1/12*	1/6*	1/3*	2/3*	1*	1/16	1/8	1/4	1/2	1*	1/40	1/20	1/10	1/5	1/2	1/50	1/25	1/12	1/6	1/3
8–9 A.M. and 3–4 P.M.						1/5*	1/2*	1*	1 1/2*	3*	1/30	1/15	1/8	1/3	2/3	1/30	1/15	1/8	1/4	1/2
7–8 A.M. and 4–5 P.M.											1/20	1/10	1/5	1/2	3/4	1/20	1/10	1/5	1/3	2/3
6–7 A.M. and 5–7 P.M.											1/15*	1/8	1/2*	3/4*	1*	1/15	1/8	1/4	1/2	3/4
5–6 A.M. and 6–7 P.M.																1/10*	1/5*	1/3*	2/3*	1 1/2*

The exposures given are approximately correct, provided the shutter-speeds are accurately marked. In case the results are not just what you want, use the tables merely as a basis and increase or decrease the exposure to fit the conditions. Whenever possible keep the shutter-speed uniform and vary the amount of light when necessary by changing the stop. **Focal-plane shutters require only one-third of the exposures stated above.**

SUBJECTS. For other subjects, multiply the exposure for an average landscape by the number given for the class of subject.

1/8 Studies of sky and white clouds.

1/4 Open views of sea and sky; very distant landscapes; studies of rather heavy clouds; sunset- and sunrise-studies.

1/2 Open landscapes without foreground; open beach, harbor- and shipping-scenes; yachts under sail; very light-colored objects; studies of dark clouds; snow-scenes with no dark objects; most telephoto-subjects outdoors; wooded hills not far distant from lens.

2 Landscapes with medium foreground; landscapes in fog or mist; buildings showing both sunny and shady sides; well-lighted street-scenes; persons, animals and moving objects at least thirty feet away from the camera.

4 Landscapes with heavy foreground; buildings or trees occupying most of the picture; brook-scenes with heavy foliage; shipping about the docks; red-brick buildings and other dark objects; groups outdoors in the shade.

8 Portraits outdoors in the shade; very dark near objects, particularly when the image of the object nearly fills the plate and full shadow-detail is required.

16 to 48 Badly-lighted river-banks, ravines, glades and under the trees. **Wood-interiors** not open to the sky. **Average indoor-portraits** in a well-lighted room, light surroundings.

PLATES. When plates other than those in Class I are used, the exposure indicated above must be multiplied by the number given at the head of the class of plates.

For Perpetual Reference

For other stops multiply by the number in the third column

As all the figures in the table opposite are based upon the use of stop F/8, or U. S. 4, it does not appear here among the ratios for other stops.

U. S. 1	**F/4**	**× 1/4**
U. S. 2	**F/5.6**	**× 1/2**
U. S. 2.4	**F/6.3**	**× 5/8**
U. S. 3	**F/7**	**× 3/4**
U. S. 8	**F/11**	**× 2**
U. S. 16	**F/16**	**× 4**
U. S. 32	**F/22**	**× 8**
U. S. 64	**F/32**	**× 16**

Example

The factors that determine correct exposure are, first, the strength of light; second, the amount of light and dark in the subject; third, speed of plate or film; fourth, the size of diaphragm used.

To photograph an average landscape with light foreground, in Feb., 2 to 3 P.M., bright sunshine, with plate from Class 1, R. R. Lens, stop F/8 (or U. S. 4). In the table look for "Hour," and under the column headed "Bright Sunshine," note time of exposure, 1/16 second. If a smaller stop is used, for instance, F/16, then to calculate time of exposure multiply the average time given for the F/8 stop by the number in the third column of the table for other stops, opposite the diaphragm chosen. The number opposite F/16 is 4. Multiply 1/16×4=1/4. Hence, the exposure will be 1/4 second.

For other plates consult the table of plate-speeds. If a plate from Class 1/2 be used, multiply the time given for average exposure, F/8 Class 1, by the number of the class. 1/16×1/2=1/32. Hence, the exposure will be 1/32 second.

Speeds of Plates on the American Market

Class-Numbers. No. 1, Photo-Era. No. 2, Wynne. No. 3, Watkins

Class 1/3, P. E. 156, Wy. 350, Wa.
Ilford Monarch
Lumière Sigma
Marion Record
Seed Graflex
Wellington Extreme

Class 1/2, P. E. 128, Wy. 250, Wa.
Ansco Speedex Film
Barnet Super-Speed Ortho.
Central Special
Cramer Crown
Eastman Speed-Film
Hammer Special Ex. Fast
Imperial Flashlight
Seed Gilt Edge 30
Wellington 'Xtra Speedy

Class 3/4, P. E. 120, Wy. 200, Wa.
Barnet Red Seal
Cramer Instantaneous Iso.
Defender Vulcan
Ensign Film
Hammer Extra Fast, B. L.
Ilford Zenith
Imperial Special Sensitive
Paget Extra Special Rapid
Paget Ortho. Extra Special Rapid

Class 1, P. E. 111, Wy. 180, Wa.
American
Ansco Film, N. C.
Atlas Roll-Film
Barnet Extra Rapid
Barnet Ortho. Extra Rapid
Central Comet
Imperial Non-Filter
Imperial Ortho. Special Sensitive
Kodak N. C. Film
Kodoid
Lumière Film and Blue Label
Marion P. S.
Premo Film-Pack
Seed Gilt Edge 27
Standard Imperial Portrait
Standard Polychrome
Stanley Regular
Vulcan Film
Wellington Anti-Screen
Wellington Film
Wellington Speedy
Wellington Iso. Speedy

Class 1 1/4, P. E. 90, Wy. 180, Wa.
Cramer Banner X
Cramer Isonon
Cramer Spectrum
Defender Ortho.
Defender Ortho., N.-H.
Eastman Extra Rapid
Hammer Extra Fast Ortho.
Hammer Non-Halation
Hammer Non-Halation Ortho.
Seed 26x
Seed C. Ortho.
Seed L. Ortho.
Seed Non-Halation
Seed Non-Halation Ortho.
Standard Extra
Standard Orthonon

Class 1 1/2, P. E. 84, Wy. 160, Wa.
Cramer Anchor
Lumière Ortho. A
Lumière Ortho. B

Class 2, P. E. 78, Wy. 120, Wa.
Cramer Medium Iso.
Ilford Rapid Chromatic
Ilford Special Rapid
Imperial Special Rapid
Lumière Panchro. C

Class 3, P. E. 64, Wy. 90, Wa.
Barnet Medium
Barnet Ortho. Medium
Cramer Trichromatic
Hammer Fast
Ilford Chromatic
Ilford Empress
Seed 23
Stanley Commercial
Wellington Landscape

Class 5, P. E. 56, Wy. 60, Wa.
Cramer Commercial
Hammer Slow
Hammer Slow Ortho.
Wellington Ortho. Process

Class 8, P. E. 39, Wy. 30, Wa.
Cramer Contrast
Cramer Slow Iso.
Cramer Slow Iso. Non-Halation
Ilford Halftone
Ilford Ordinary
Seed Process

Class 100, P. E. 11, Wy. 3, Wa.
Lumière Autochrome

OUR ILLUSTRATIONS

WILFRED A. FRENCH

Miss Katherine Bingham's extremely beautiful picture, suggestive of the Easter spirit, which appeared in March Photo-Era as an illustration of a suitable cover-design, found such favor among our friends that it has been made to serve an even more practical and timely purpose in the current issue. For the meager words of praise and data in connection with this chaste work of art, the reader is referred to this department in the March number.

Among the masters in photographic portraiture is Francis A. Place, of Boston, a past-president of the P. A. of A. and the P. A. of N. E. His ability to express the character of his sitter, by means of his noble medium, is apparent in the portrait of an eminent member of the Massachusetts judiciary — Chief-Justice Aiken of the Supreme Court. See frontispiece. Here the artist shows us the profound judicial mind, as well as the force and dignity that eminently belong to the man he has portrayed. The modeling and plasticity of the finely shaped head justify the highest praise. The appropriate simplicity of the setting, the successful management of the black judicial robe and the skilful control of the light are points worthy of study and emulation. Data: Home-portrait — room in the courthouse; Voigtländer & Son's portrait-lens, at full opening; exposure, 2 seconds.

George H. Hawley, who came prominently into notice as an exhibitor at the New England Convention last year through "Stratford Marsh," published in November Photo-Era, 1915, contributes to the current issue, page 158, a decorative waterscape that emphasizes his ability as a photo-pictorialist. The idea of partly obscuring the sky by overhanging tree-branches, although used frequently, is a valuable aid in composition as demonstrated in this instance. At other times, however, this resource fails of its purpose, especially when the obscuring effect is carried to excess. No data.

J. E. Mock, recognized as the foremost portraitist in Rochester, N. Y., is one of the most industrious of men in his profession. His one recreation is genre-work, which includes fanciful heads suggestive of the muses. Which of the mythical nine is represented on page 161 might be a little difficult to say with accuracy, as no data are at hand. If the interesting head, with its expressive countenance, suggests some muse other than poetry, the interested reader is at liberty to choose some other ideal. In any event, in pose, expression and composition the picture is an admirable study.

The seven pictures, pages 163 and 164, that accompany the valuable article by Charles J. Adams will delight Photo-Era readers on account of their natural charm, wholesome vivacity and variety of subject. Best of all, perhaps, is the appropriate and attractive setting the artist has given to each theme, and this he has done with genuine artistic feeling and technical skill. Indeed, I am impelled to draw particular attention to this important feature in Mr. Adams's delightful specialty, because it is so rare. In most cases the child-studies offered Photo-Era for publication are very crude, having been made with no apparent regard for the setting or for nearby objects, however incongruous. They are hasty snapshots made on the spur of the moment, and that is the basis of the usual apology — in case the camerist is conscious of any shortcoming in his attempt to make a real picture. Because the child was "snapped" in an undeniably happy moment, and the mother and friends are nearly hysterical with joy over the camerist's success, are no reasons why that picture should take the photo-publishers by storm. Such pictures have their uses, and will ever be treasured by the happy mother, but they should be confined to the family album or baby's record-book.

From the portfolio of B. F. Langland has come to us many a delightful marine or landscape filled with grateful sunshine and the breath of pure, invigorating air. The genial prospect, page 166, with its wholesome atmosphere and passing clouds, exemplifies the true Langland mood and the artist's love of nature. The original print has been trimmed to admirable pictorial proportions, and the result fulfils all the conditions of a well-ordered composition. Data: June, 10 A.M.; good light; $3\frac{1}{4}$ x $5\frac{1}{2}$ Film-Plate Premo; Zeiss-Kodak lens; stop, F/6.3; 3-time color-screen; $\frac{1}{10}$ second; Eastman film-pack; pyro, 20 minutes in tank; Cyko contact print; developed with dianol.

The delineation of insect-life demands, first of all, mastery of technical resources, and in this department of photographic practice Lehman Wendell is supreme — judged by his little masterpieces, pages 167–171. No data.

Although suggesting a genre, Mr. Higgason's portrait of an attractive young woman, page 173, belongs to the realm of portraiture. The subject appears to have been carefully posed and lighted, and the beautiful, artistic and gratifying result fully warranted these preparations. The artist doubtless appreciated the artistic possibilities of his good-looking sitter and produced a charming study, although as a likeness, showing the character and soul of the model, it cannot be as satisfactory as a front view with the eyes directed towards the camera. Data: Large north window; forenoon; $14\frac{1}{2}$-inch portrait-lens, used at full aperture; F/4.5; 8 x 10 print on Eastman E. S. Platinum.

An instance where overhanging foliage is introduced with consistently artistic effect is "The Courthouse," by J. H. Field, page 177. This well-known pictorialist — a straight professional worker — is an experienced and successful picture-maker, and rarely errs in the matter of composition. We have here a pleasing example of a decorative architectural study — the courthouse in a picturesque setting. Data: August, 5 to 6 P.M.; 5 x 7 view-camera; R. R. lens; B. & L. telephoto attachment; Eastman film; pyro-soda; direct print on Artura Iris E.

The Photo-Era Monthly Competition

The faculty to see artistic beauty at night, when objects are made visible by the light of the moon or by artificial light, still marks a comparatively small number of amateur workers. The workers familiar with what has been done in the field of night-photography had a marked advantage over inexperienced camerists. Many of the latter, with the best possible intentions, and animated by a desire to make an effort even though the chances to get into the prize-winning class of the contest, "Night-Pictures," were small, could not resist the temptation to record the glittering outlines of buildings, bridges, streets, as illuminated by electric lamps. Pictures of this class were contributed in large numbers. Their authors will undoubtedly profit by their inadequate though painstaking efforts, and in future will be content with nothing less than pictures that are properly timed and well composed, and express the novel and mysterious beauty of illuminated night-scenes. That all this is possible is made clear by the interesting prize-pictures in this issue. The whole subject is thus explained in a nutshell, as it were.

The strikingly beautiful night-scene by W. H. Rabe, page 180, is also one of a series of fifty pictures that were exhibited in Boston recently, and to which reference was made in March PHOTO-ERA. There is a haunting, mysterious charm in these of Mr. Rabe's creations, that is due partly to the quality of the light that pervaded the exposition-grounds after dark. To this is added the artist's supreme skill and experience in managing the subject from the composition and exposure to the finished print (enlargement), including his superior judgment in the selection of printing-material. The foreground plays a prominent part in all these exposition-pictures, and, notably, in the theme that enabled him to win the first prize in this competition. And when it is known that Mr. Rabe worked under uncommon difficulties, which included the enforced use of a cheap, old-style single-lens equipment, the wonder grows. Then, indeed, one appreciates the well-known saying, "It 's the man behind the gun." Data: $5.50 Adlake magazine-camera; $3\frac{1}{4}$ x $4\frac{1}{4}$ single lens; Standard Orthonon plates, $3\frac{1}{4}$ x $4\frac{1}{4}$; exposure, 10 minutes; open lens; 10 x 12 enlargement on P. M. C. No. 3 bromide paper, with an improvised enlarging-apparatus consisting of two telescoping starch-boxes fitted with a Smith Semi-Achromatic (soft-focus) lens.

The presence of human life — so little in evidence in night-pictures — is the keynote to Mr. Baker's theme, page 181. Every worker familiar with camp-life will recognize the naturalness and fascination of this camp-fire scene, with the possible exception of the flames issuing from the burning logs. To produce the illusion of a real fire, the camerist had recourse to the usual handy means — flash-powder.

The nocturnal scene near Columbia University, page 182, serves as a good example of light and shade and is well composed. There are no lights that may be said to be objectionable, and the two sources of illumination, at the right of the statue, are a part of the general lighting-scheme. The statue adds greatly to the artistic result. Data: November, 1915, 9 P.M.; electric light; 8 x 10 Century camera; $8\frac{1}{2}$-inch Dagor No. 3; stop, F/8; exposure, 15 minutes; 8 x 10 Stanley; M. Q.; 8 x 10 Azo print.

There is nothing unusual in the view depicted by F. W. Kent, page 182; but the technical skill of the camerist merits special commendation. The most has evidently been made of a difficult subject, and the halation appears to have been well controlled. The large window, at the right, detracts a little. It is very easy to make it less conspicuous by local reduction on the negative. Data: December 16, 1915, about 8 P.M.; Series II, No. 2 Turner-Reich lens in Koilos shutter; stop, F/11; exposure, 6 minutes; Standard Orthonon; pyro; 5 x 7 Azo K print.

The only artistic moonlight in this competition is the effort by W. S. Davis, page 184. One expects nothing less from this capable and versatile artist. The sheen on the water contrasts well with the dark masses in this attractive prospect. Data: June; exposure, 20 minutes, 8.15 to 8.35 P.M.; R. R. lens; stop, F/8; 8 x 10 Cramer Inst. Iso; 7 x 9 print on Barnet "Tiger Tongue" bromide.

The Beginners' Competition

It is curious what a difference the tone makes in the artistic result of a photographic print. Reduced to black and white, as well as to a small size, its attractiveness often disappears. This has frequently been the case with pictures published in these pages, and is true, to a certain extent, of the prize-picture by Margaret Anderson, page 187. The original print owes much of its beauty to the paper used, viz., Azo E. The subject itself seems to warrant the favorable opinion it created in the minds of the jury. The sloping bank, topped by a graceful tree, forms an attractive theme. The water in the foreground, be it part of a pond, river or brook, increases the pictorial interest, except that the reflections of objects other than the sky are somewhat *de trop*. Nevertheless, the arrangement, as a whole, is decidedly pleasing, and it breaks away from the conventional. Data: October, 11 A.M.; 5 x 7 Korona camera; lens at F/11; $3\frac{1}{4}$ x $5\frac{1}{2}$ Stanley; pyro; $\frac{1}{25}$ second; direct print on Azo E, hard.

As a composition, pure and simple, the picture entitled "A Fish-Story," page 188, makes a successful appeal. The proportions are admirable, as are the perspective and workmanship. Yet one finds it difficult to reconcile that big fish to the size of the small, nearby stream. Did the fisherman catch it from its narrow waters, or was its habitat in some big lake? The seeming inconsistency is answered by the title, although readers who are experienced sportsmen and averse to telling an untruth, be it even a fish-story, are free to offer an explanation. Data: 5 x 7 Poco camera; good light; Imperial plate; M. Q.; lens at stop F/22; $\frac{1}{25}$ second; $4\frac{1}{2}$ x $6\frac{1}{2}$ Aristo S. T. print.

The concluding illustration, page 189, would seem to be a fitting companion to the last snow of the season — in Massachusetts the first week in March. The statement is based on the prognostication of the local weatherman. The scene, which is not without a degree of charm, must have appealed very strongly to the young camerist, whose enthusiasm seems to have outweighed his sense of pictorial proportion. The space allotted to the snow-covered area equals that given up to the sky, although in neither case is there a feeling of monotony. The row of parallel shadows forms an effective foil to the irregular mass of branches and twigs against the sky. The only unfriendly note is the conspicuous, dark snow-covered object at the left. The outwardly leaning tree, in the foreground, would be more valuable in this promising scheme if it inclined the other way. Data: February 9, 1915, 9 A.M.; good light; $6\frac{1}{2}$-inch Zeiss-Kodak lens; stop, F/22; $3\frac{1}{4}$ x $5\frac{1}{2}$ Special Premo; $\frac{1}{5}$ second; Standard Orthonon; Duratol; 4 x $7\frac{1}{2}$ print on P. M. C. bromide, smooth; only part of negative used.

A Vest-Pocket Kodak Hint

The users of the popular Vest-Pocket Kodak will find it a good plan to get a wide elastic band to slip around the camera so that it covers and keeps away dust from the lens in the front and the "peep-hole" at the back. The elastic band will also prevent the side coming off unexpectedly should the catch be accidentally pushed over to "OPEN."

The Honest Amateur

Critic —"Amateur photographers are the most honest class of persons I know of."

Camera-man —"How so?"

Critic —"They have never been known to take anything of value."—*Harold Loeb.*

ON THE GROUND-GLASS

WILFRED A. FRENCH

The Profile at Its Best

The Editor has had his say on the subject of profiles — before the camera, in public conveyances and elsewhere — profiles that, quickly superseding an engaging front view, prove a complete disenchantment. But there is the opposite experience, which, though rare by comparison, is equally disappointing. As he looked up from his paper in the street-car, the other day, the Editor noticed a young woman, who sat opposite him, look out of the window into the vestibule. She displayed a profile of rare beauty. From the forehead down to the throat, the features were as delicately chiseled as those of the Psyche of Capua. He had scarcely formed a mental impression of those exquisite contours, when suddenly they vanished, giving place to a front view. The change was startling, to say the least. The eyes revealed themselves as ill-shaped and dull, while nose and mouth bore no suggestion of classical beauty or refined expression. The impression conveyed to the critical sense of the observer seemed to be somewhat in the nature of a rebuke for presuming to exercise the critical faculty instead of being absorbed in the printed news of the day. On the other hand, instances where the symmetrical beauty of a girl's or a woman's face loses nothing by a side turn of the head are not uncommon. But, however disappointing in shape may be the nose or mouth of a woman, it is a condition for which the person may not be responsible, and for which there would seem to be no remedy.

With a man, however, the case is entirely different. There are innumerable instances of men who have deliberately sacrificed their mustache, or are disinclined to grow one, in order to conform to fashion's decree, and thereby discard nature's means to modify a profile that often suggests the features of a degenerate or of a sensualist, when in reality these unfortunate-looking individuals may be men of high character and of temperate living. But if smooth-faced men were to study their features as reflected in a secondary mirror, they might discover the necessity to grow a mustache, and thereby immeasurably improve their facial appearance.

A Tip to Photo-Finishers

When a traveler returns from a visit to some foreign land with a large batch of exposed plates or roll-films, he generally places them in the hands of a regular photo-finisher. Sometimes, he will divide the material among two finishers, his motive being not to put all his eggs into one basket. This is a wise precaution, especially when the exposures are of very great importance. When, however, he distributes the work among, let us say, eight different concerns, the reason finds its source in the fact that he is trying to get something for nothing. He therefore divides his obligation among a number of creditors, for he has no intention to pay any of them. After all, such a rogue may argue that it is much better to owe eight craftsmen $5 each than one craftsman $40. Besides, the danger of having eight law-suits brought against him is minimized. This is a lesson in business-experience that many a photo-finisher has learned to his sorrow. Therefore, the best plan is to compel such a client to pay cash on delivery.

It Never Will Be Missed

If there is a building in London among those destroyed, or to be destroyed, by Zeppelin bombs — although its demolition by order of the London municipality is greatly to be preferred — it is the spurious "Old Curiosity Shop," whose proprietor has been making money from gullible visitors, principally Americans. Strangely enough, although this fraud has been exposed by the late Henry Snowden Ward in his book "The Real Dickens Land," and Henry F. Dickens, son of Charles Dickens, it still prevails. Among the publications that still acquiesce in this deception, I very much regret to state, is one of the English photographic weeklies, whose editor ought to acquaint himself with the facts in the case and exclude from his pages any future reference to this despicable fraud.

Objects to Logical Spelling

In a letter to *The British Journal of Photography* an Englishman, under the pseudonym of "Bow Bells," complains bitterly that American photographic writers deliberately mutilate well-known photographic terms, in the belief that they are improving the English language. He objects particularly to the trade-name, "Orthonon;" "Orthochromatic Non-Halation" is what he probably would use. Of course, he misses the "u" in color, favor, humor, but forgets that these words are derived from the Latin color, favor, humor. In Italian and Spanish we find "colore" and "color;" even the Germans use "colorit." The "u" in these and similar words is just as superfluous as an extra "l" would be in marvelous, libelous, traveler, jeweler, modeling, rivaling.

Our ultra-conservative friend is impatient with such "innovations" as program and center, being probably not aware that the former has quietly taken its place with epigram, telegram, monogram, and that "center" is better than "centre." Fancy an American using this word as a verb, which would yield such perversions as "centred" and "centreing"! He is furious over darkroom, highlight, dryplate, which he prefers as separated words, but which create a sense of ambiguity not found in the American use of the words. He neglects to mention the favorite English "focussing"— a senseless adherence to an old and illogical form; for the present participle of a verb is formed by simply adding the syllable "ing" to the verb. The extra "s" is needless, unless the accent be thrown on the second syllable, as in propelling, occurring, and beginning.

A Qualification

Scene.— Sanctum of the Editor. Enter anxious-looking individual.

"Excuse me; but do you know of a studio in need of an accomplished operator?"

Editor — "Yes; there 's a studio-proprietor who wants a man to make flashlights at society-functions. Have you the *entrée* into aristocratic circles?"

Applicant — "I should say I had. I have recently served as chef in a first-class restaurant. *Entrées* are right in my line."

EVENTS OF THE MONTH

Announcements and Reports of Club and Association Meetings, Exhibitions and Conventions are solicited for publication

The New York State Convention

The twelfth annual convention of the Professional Photographers' Society of New York took place in the Winter Garden (twenty-fourth floor), Hotel McAlpin, corner Broadway and 34th Street, New York City, February 29, March 1 and 2. Its success was due to the judgment and energy of the executive board — E. B. Core, president; Wm. Furlong, vice-president; E. L. Mix, secretary, and F. E. Abbott, treasurer. The advertising-campaign, begun a month in advance of the date of the convention, included a series of twelve postcards, printed in sepia and bearing the portraits of the principal speakers and demonstrators, together with a personal sketch and the subject of each. This capital idea originated with the president, "Pop" Core, which shows that success in various important activities, to-day, comes from somewhat unexpected sources; viz., old men — old only in years, but rich in practical experience and imbued with the spirit of unspent youth. Witness General Hindenburg, Grand-Duke Nicholas, General Joffre, and — E. B. Core.

E. L. MIX BY T. W. KILMER, M.D.
PRESIDENT-ELECT, P. P. S. OF N. Y.

The character of the program reflected the sagacity and good taste of the committee, and every promise was carried out to the letter, with the exception of Frank Scott Clark, of Detroit, whom important business prevented from being present.

The first day was devoted to preliminary business, and to lectures by Henry Rankin Poore, artist, instructor and writer, and L. B. Jones, advertising-manager of the Eastman Kodak Company.

Mr. Poore, known to photographers chiefly through his work "Pictorial Composition and the Critical Judgment of Pictures," selected for his topic, "The Primer on Composition as Applied to Photography," using stereopticon-views to illustrate his arguments. His talk reflected the thoughts and principles set forth in the above-mentioned book, which has enabled many a photographer — professional or amateur — to comprehend the rules of art and to apply them to his work.

Mr. Poore was followed by John Schneider, of the Baker Art Gallery, Columbus, Ohio, who gave an illuminating talk on how to get business. According to the speaker, we work too much at our profession and not enough at our business. To do a prosperous business, we must go where business is to be had. "Study the locality you are in and conduct your business accordingly. You cannot do a twenty-five-dollar-a-dozen business in a five-dollar-a-dozen locality." He insisted that advertising was indispensable to get business. Circumstances alter cases; but advertising, in order to be effective, must be honest and sensible. "Keep your name before the public — of course in a desirable way. As business-men you are not awake. Suppose that every photographer were to set aside five percent of his gross receipts a year, to be expended for judicious advertising and continued for three years. I firmly believe that there would be two portraits made for every one being made now. The business would be doubled."

Then followed five-minute talks from the floor by Mary A. Stewart (Canandaigua); Smith (Rochester); Frey (Utica); Beach and McGeorge (Buffalo); Mock (Rochester); Conklin (Troy); Hale (Geneva); Garabrant, of the Edison Co. (New York); Col. Marceau (New York and Boston); Mason, of the Bellevue Hospital (New York); Bowersox and Kehres (Cleveland); Bushong (Worcester, Mass.); Spellman (Detroit); Sherman (Newark, N. J.); Cunningham (Montreal).

L. B. Jones,

of Rochester, a figure hitherto not identified with the lecture-platform, was persuaded by the committee to make clear the reason why the first prize in the Eastman Kodak Company's photographic competitions has been won regularly by Philadelphia during the past four years. In other words, he was asked to explain the advertising-value of a photograph and how it should be made. This he did, in the evening, in a lucid, convincing way, using numerous superb lantern-slides of successful and unsuccessful pictures — what to do and what to avoid. Mr. Jones's talk made a profound impression, and it remains to be seen whether William Shewell Ellis, of Philadelphia, will continue to corner the market in $500 Eastman Kodak prizes. As these awards are made solely upon merit, and with a fairness not questioned by even one disappointed contestant, it is fair to assume that the first prize in the next Eastman competition will be awarded to Mr. Ellis or to a more successful contestant. One thing is certain, however; viz., that there is big money in photographs that advertisers can use, and a knowledge of the requirements are easy enough to obtain. The making of a successful photograph is another matter.

Following Mr. Jones, Mr. E. I. Buxbaum, a member of the association, talked on the subject of making soft-focus enlargements, imparting to them atmospheric and pictorial value, and thereby taking them out of the commonplace class. He demonstrated with 5 x 7 negatives, sharply delineated with a No. 6 Heliar lens, and enlarging them to 25 x 30 with a 9-inch Wollensak Verito, first focusing with the open lens and, before exposing, getting the desired degree of diffusion with the F/6 stop. Enlargements made in this manner eliminate technical imperfections and dispense with retouching. The smaller the negative, the less diffusion required.

The second day, with an attendance of nearly two hundred members, began with a demonstration in portrait-lighting by

Howard D. Beach,

past-president of the society. He showed by means of the broad, vertical window of the lecture- and exhibition-hall his own method of electric illumination (explained with a series of electric lamps at the 1914 state-convention). He concentrates the light upon the face of the sitter and subdues it on the rest of the figure. He used for this purpose an exceedingly attractive and intelligent model, Miss Florence Reutti, of New York, who also assisted in the succeeding demonstrations held during the day. The demonstrators were introduced by Pirie MacDonald in characteristic fashion.

George M. Edmondson,

of Cleveland, and past-president of the national association, followed. Using an eight-tube Cooper Hewitt light (Studio Portrait-Skylight), and with Miss Reutti as model, he made a number of telling hits. The main idea of his talk was that the photographer must feel what he is doing, he must be in tune with his sitter, otherwise the values will be wrong. It cannot be explained any more than the inspired painter or singer can analyze his method of interpretation. Avoid fussing — doing this and doing that in the hope of improving things. Do not give the impression of being fussy. It tends only to annoy the sitter and to prevent spontaneity of expression. He gets his best results without fuss and special preparation. He works on impulse, just as an inspired, undisturbed improvisation of the musician often surpasses the labored, premeditated effort. He has the conditions right and goes right ahead. While Mr. Edmondson was holding forth, quite oblivious of the camera and the expectant Miss Reutti behind him, Ryland Phillips, who had crept in unseen by the speaker, took a seemingly unfair advantage and quickly exposed a number of plates on charming poses. It looked like a conspiracy between the Quaker City man (not so slow) and the model.

Philip Conklin,

one of the youngest members of the society to talk before the convention, and one who has already made a big start in a promising career, followed. The task he had set himself was to reproduce, as nearly as possible, a portrait of a young woman he had made in his home-studio (by daylight), using on this occasion artificial light and a different model — both new to him. In this connection he used "his one best bet"— diffusing-screens of black cheese-cloth. "One of the elements in getting atmospheric effects in portraiture is to balance the light — by raising the shadow to balance the highlights or by lowering the highlights to balance the shadows." The shadows, he admitted, gave him more trouble than the highlights.

At the close of the morning-session it was announced that the ladies of the convention were the guests of the Metropolitan Section of the P. P. S. of N. Y. at luncheon at Shanley's, at 12.30 P.M., to be followed by a matinée at the Hippodrome. Thirty-five ladies availed themselves of this invitation.

The afternoon session began promptly at 2 o'clock. The initial speaker was

William Shewell Ellis,

of Philadelphia. He said, in substance, that he believed in life rather than in tone. He asked the model to take a standing pose, facing the camera —"No interest!" She then turned the body away from the camera and the head towards the camera — "There is life!" The model then sat in the chair, leaning back; result, "Lifeless!" Leaning forward and gazing into the lens yielded instant life. Mr. Ellis said that a sitter without soul was to him like a corpse. He believed in a common (sympathetic) interest between the sitter and the artist; then he could obtain good results. He then gave way to the next speaker,

William M. Hollinger,

"one of the eighty photographers on Fifth Avenue!" This distinguished veteran confided to his hearers that, by treating the supply-dealer's agent right when he calls for your order, you can find out all about your competitor. Referring to the preceding demonstrations, Mr. Hollinger found fault with the chair allotted to the model. "I notice," he said, "that in posing this attractive model in a high-back chair you have all chair and no girl. I would recommend a low-back chair, then you 'll get something worth while!"

Ira L. Hill,

"the idol of the matinée-girl," as Mr. MacDonald introduced him, said that a side-view of the head of man, woman or child yielded the most character — so he had found. It is sometimes difficult to see this in a sitter, but when found it should be photographed. Such a side-view formed a pleasing, lasting likeness. A certain light will bring out the character in the sitter. The speaker then dwelt on the quality of the portrait. The public should be the judge of the quality. It will pay any price for what it wants, and the photographer should strive to find that out. There is the delicate quality of woman, her charm and grace; and the rugged, serious quality in a man's portrait. Mr. Hill then illustrated some of his ideas with the aid of Miss Reutti.

E. L. Mix,

the busy secretary of the society, was introduced next. He differed from the preceding speakers in that he put expression ahead of everything. Using Mr. Hollinger as a model, Mr. Mix proceeded to illustrate his ideas.

George W. Harris,

another national past-president, was the next speaker. His theme was the appearance of the studio. In nine out of ten studios he had seen there was little visible effort by the proprietor to make a good impression on the customer. Pictures indifferently framed and badly hung, generally a poor assortment, and the place did not look clean, artistic, right. The photographer had only to study the appearance of the display-windows of successful merchants. First of all, they were scrupulously clean, then the contents carefully selected from the purveyor's ample stock, arranged with commendable artistic taste, the object being to impress and attract customers. The photographer cannot afford to do less than the milliner, the haberdasher or the clothier.

Elias Goldensky

came next. He was in a very serious mood. He said that it was impossible to express how one does his best. A sitter placed in a foreign environment ceases to be natural. It is necessary for the photographer to put a part of himself into his subject. He should not be influenced by what the sitter tells him. He must be sincere in his work to enjoy it. The speaker then made an eloquent plea for high ideals — efforts that are uplifting and make the world respect you. Referring to the handsome models that had been used during the day by his predecessors he doubted the helpfulness of these demonstrations. "It 's very easy to make pleasing pictures of handsome, graceful and well-formed models who are experienced in posing before the camera. Many of us have to struggle with awkward sitters that have potato-faces." This truism brought down the house. Mr. Goldensky might have added that in many instances attractive portraits have been made of indifferent-looking sitters, and that disappointing portraits frequently result from faces in which animation and color constitute an irresistible charm. At the conclusion of Mr. Goldensky's spirited and fearless address, Mr. MacDonald quickly arose and declared, "That was the finest speech Goldensky ever made!"

John E. Garabrant,

staff-photographer of the New York Edison Company, followed with a talk on three diametrically opposed systems of lighting. He explained the character of Type C Mazda (nitrogen-filled) Lamp; the Hallen Lamp (10 amperes); the Simplex Lamp. for motion-pictures, and the 8-tube Cooper Hewitt Mercury-Vapor Lamp. He explained the use of the transformer (the red screens) in the Cooper Hewitt Lamp, producing a light approximating the actinic quality of pure daylight. This light is the best for simple, ordinary enlarging.

The third day was devoted to talks and the election of officers. In the morning, Miss Jessie MacDonald, daughter of Pirie MacDonald, read a paper, "Why Men Fail," by J. C. Abel, who was unable to attend the convention. The interest was divided between the practical contents of Mr. Abel's communication and the admirable manner in which it was delivered by Miss MacDonald, who resembled her father in her style of delivery and proved herself an elocutionist of high order. Miss MacDonald is in great demand as a lecturer by the various women's clubs. She was given a rising vote of thanks. Mr. J. E. Mock, who preceded "Pop" as president of the P. P. S. of N. Y., gave a clear and interesting description of the Kodachrome, emphasizing its beauties and advantages. Other talks on various topics, dear to the heart of the progressive photographer, were given by Messrs. Harris, Hollinger, Morris, Parker, Norton, Zimmerman, Dunn, Ollivier, Smith, Leatherdale, President Kennedy of the Canadian Photographers' Association and Miss Smith. This symposium of oratory yielded much valuable information, and members were busy taking notes.

The convention, successful despite the absence of many prominent members, was now brought to a close by the election, as nominated, of a new set of officers.

OFFICERS FOR 1916–1917

President,	E. L. Mix, New York City
Vice-president,	J. E. Hale, Geneva, N. Y.
Secretary,	Charles Hallen, New York City
Treasurer,	F. E. Abbott, Little Falls, N. Y.

The next convention will be held in New York City, some time in February, 1917, the date to be announced later.

THE PHOTOGRAPHIC PRESS

Present in person, and representing their publications at the meetings and the banquet, were Carl E. Ackerman, editor of *The Photographic News;* Frank V. Chambers, editor of *The Camera* and *The Bulletin of Photography* and Wilfred A. French, editor of PHOTO-ERA.

THE BANQUET

The gastronomical repast, an established feature of every convention, photographic or otherwise, took place Wednesday, March 1, in the banquet-hall, on the twenty-fourth floor, Hotel McAlpin. It was an enjoyable and creditable event. One hundred and eighty-five ladies and gentlemen, including a few invited guests, were seated at circular tables The members of the executive board — all men — sat at a long table placed on a raised platform, overlooking the many genial, vivacious groups graced by the presence of handsome women. The lonesomeness of the segregated dignitaries can better be imagined than described. Out of sheer pity several of the merry-makers exchanged places for a little while with some of these unfortunates and won their everlasting gratitude. While the large assemblage was merrily, but temperately, disposing of the delicious viands provided, a superb orchestra was discoursing exquisite music — another proof of the entertainment-committee's admirable taste. Then came the speech-making in charge of Howard D. Beach, who developed unsuspected talents as toastmaster. The orators, each vying with his fellows in wit and repartee, were Charles L. Lewis; George W. Harris; E. B. Core; J. E. Mock; Ryland W. Phillips; Dudley Hoyt; County-clerk Cashin and his partner in crime — Editor Nolan of the *Yonkers Gazette* — the champion humorist of the evening and fellow-townsman of President E. B. Core, formerly of New York and now of Yonkers. It was whispered that he will be held to strict accountability for their presence at the banquet.

The memorable evening was brought to a close by Pirie MacDonald, who made an eloquent plea for military preparedness, immediately followed by the singing of "America," in which every one joined. During the course of the evening, "Pop" Core was given a solid silver cup of chaste and slender design and about two feet high, the gift of members of the P. P. S. of N. Y. The recipient was deeply touched by this unexpected manifestation of love and esteem, and expressed his gratitude in a few tender words.

THE PICTURE-EXHIBIT

Although the exhibition of prints was not so large or artistic in quality as in former years, it created considerable interest. The most noteworthy exhibits were as follows:

The Gerhard Sisters, Clara Winter, Belle Johnson. Eugene Hutchinson, J. M. Steffens, Howard D. Beach, Frank Scott Clark, Ryland W. Phillips, Elias Goldensky, William Shewell Ellis, William H. Rau, J. Mitchell Elliott, E. H. Weston, Knaffl Bros., William Noetzel, Philip Conklin, J. H. Garo, J. E. Mock, J. C. Bushong, Theo C. Marceau, A. T. Proctor, W. H. Towles, Frank Bill, Baker Art Gallery, Clifford Norton, J. P. Haley, R. D. Haley, W. B. Stage, Dudley Hoyt, Wm. M. Hollinger, Pirie MacDonald, I. Buxbaum, E. L. Mix, S. H. Lifshey, Ira L. Hill, B. J. Falk, Ira D. Schwarz, Charles Hallen.

PROMINENT PHOTOGRAPHERS PRESENT

Among the prominent craftsmen present during the convention were A. L. Bowersox, George M. Edmondson, G. C. Kehres and Clifford Norton, of Cleveland; Joseph Byron, Bradley, Dudley Hoyt, Wm. M.

Hollinger, Pirie MacDonald, Falk, Lifshey, Mix and Buxbaum, of New York City; D. D. Spellman, of Detroit; George Van Norman, of Springfield, Mass.; J. C. Bushong, of Worcester, Mass.; C. L. Lewis, of Toledo; George W. Harris, of Washington, D. C.; William Shewell Ellis, J. Mitchell Elliott, Elias Goldensky, Ryland W. Phillips and William H. Rau, of Philadelphia; Alton W. Franklin, of Charlotte, N. C., Philip Conklin, of Troy, N. Y.; John Schneider, of Columbus, Ohio, and Channell, of East Orange, N. J.

The Unit-Method of F. M. Steadman

A correspondent in Columbus, Ohio, a friend of Frank M. Steadman, informs us that the originator of Unit-Photography has been highly honored, as is evident from the following letter from the secretary of the American Physical Society, headquarters at Columbus, Ohio:

"Mr. F. M. Steadman, Concord, N. H.

Dear Mr. Steadman: It gives me pleasure to inform you that you were elected an Associate Member of the American Physical Society by action of the Council, at Columbus, Ohio, December 30, 1915.

Very truly yours,
(Signed) A. D. Cole, *Secretary*."

On account of the unexpected difficulties of manufacturing, Mr. Steadman made the mistake to advertise too early his Unit-Actinometer; but he is glad to advise those who are waiting for their orders to be filled, and those who will wish to take up the Unit-method of photography, that the instrument will be ready to market in a very short time — perhaps inside of a month from this issue.

Mr. Steadman has recently been given the privilege to explain Unit-Photography in a number of universities and schools before different physical clubs in and around New York. In some cases, as in Columbia University, the classes were composed of teachers attending the Normal Department of the University. In the City College, on the contrary, some of the classes were of boys not more than thirteen years of age. With the teachers, none could deny the correctness of the Unit-Photography theory for light-study, i.e., that of "convergence" measured in solid angle as opposed to the idea of "divergence" of light-rays from a point-source.

With the children there was instant comprehension as well as enthusiasm, and it is a proven fact that any child old enough to study even the rudiments of physics will be able to apply the Unit-method intelligently to the work of taking pictures with a camera, comprehending the matters of stop-values, speed of plates, intensity of subject and the exposure necessary to give by the exercise of their ordinary reasoning-powers.

Knowing Mr. Steadman as not only an expert technician in every branch of photography but as a man of determination and perseverance born of conviction, we are quite sure that the Unit-method of measuring light, in its application to practical photography, will receive general and substantial recognition.

To the Photographers of America

The Gerhard Sisters, of St. Louis, enclosed their cheque in payment of dues to the Copyright League, and wrote the following letter:

"Enclosed find check for $2, in payment for one year due the Copyright League. We cannot begin to tell you how much the League has helped us, and incidentally how much money we have received from violation of copyrights. We are more than pleased by the manner Mr. Lewinson, your attorney, handles these affairs."

The above letter is a typical one, and will open the eyes of many to the benefit of copyright and to the efficiency of the League. The dues were made nominal, so as to be within the means of photographers in even the remotest places; but they barely cover the cost of administration and the small salary paid to the counsel of the League for the services which every member may command of him.

Only a comparatively short time ago our pictures were considered fair and easy booty by newspapers and other publishers. Whenever they wished to use them, no questions were asked, no payment was given — THEY JUST TOOK THEM. They must, indeed, have thought photographers a sorry lot who, while they might have the brains to create good work, certainly had none to safeguard it for themselves.

The League has done good work in changing all this. It has successfully fought hostile legislation and has succeeded in obtaining a much fairer copyright-law than we had before; but to be fully efficient in protecting your interests, now and in the future, it should have a much larger membership. Numbers spell power. I know that every genuine photographer is proud of his profession and wishes to see it respected — and I ask you all therefore to join the League. Though your individual share in the good work may be small, the aggregate will show wonderful results.

Faithfully yours,
B. J. Falk,
President Photographers' Copyright League.

Photographic Activity in France

From France, Russia and Italy, unfortunately, not a great amount of work has been forthcoming. We may consider ourselves fortunate, however, to receive a notable selection of new work from M. Robert Demachy, of Paris, for the Salon. There is practically nothing to say regarding pictorial photography in France at the present time. Photographic societies appear to be doing very little. All the young members of the societies are at the front. Professional photographers, like their brethren in this country, are doing well. Almost every woman in France is wearing a medallion suspended from the neck and enclosing a portrait of her soldier husband or brother or betrothed, as the case may be. Recently an appeal has been issued to every one possessing a camera, in order that a photographic record of this many-sided war may be preserved. As a result, hundreds of pictures are being taken of incidents of the war, and of the ruins of Arras, of Soissons, of Rheims, and the injuries done in Paris and elsewhere by bombs from enemy aircraft. These have been collected chiefly through the agency of the Société Française de Photographie, and are the contributions of ordinary amateur photographers to what is described officially by the Minister of Public Instruction as "*la documentation photographique, l'illustration vivante*" of the war. The French government is also undertaking the production of official kinematograph-pictures of the fighting at the front, and the motion-picture experts have been mobilized into a corps. They are uniformed and equipped, and put under officers from the General Staff. We wonder when the British authorities will follow these examples of thought for the future, and do something similar! — F. J. Mortimer, in *Photograms of the Year 1915.*

Photographic Dealers' Association of America and International Exposition of Photographic Arts and Industries

The keynote of the fourth annual convention of the Photographic Dealers' Association of America and International Exposition of Photographic Arts and Industries, held in Hotel Statler and the Coliseum, Cleveland, March 6 to 11, was SERVICE. And if a better slogan typifying the spirit of the occasion is needed, it may be summed up in the words: "Everything for the Other Fellow." Certainly, everything that the big, generous and whole-souled natures of President H. M. Fowler and the executive and local committees could devise was done, to the end that a better and more friendly and profitable tie bind dealer, manufacturer and photographer. To talk over each other's successes and failures, exchange ideas, to learn the best methods of carrying on all branches of the business, safeguard one another's interests and help unite every one in a grand movement to make the photographic business larger, better and of greater service to the greatest number — this was the purpose that actuated those present and crowned this meeting with success. It was estimated by the management that over one hundred thousand viewed the photographic exhibits and displays of pictures at the Coliseum. The register showed a membership of one hundred and fifty-six dealers and manufacturers, and a balanced treasury. No longer any doubt exists as to the future status of the P. D. A. of A. The mornings of March 7, 8 and 9, from nine to twelve o'clock, were spent on convention-matters at the Hotel Statler; from one to eleven p.m., with the manufacturers and arts and industries exhibits in the Coliseum.

Social Entertainment

Luncheon was served each day to the members, in the hotel, at which times well-known speakers gave addresses. Tuesday, D. E. Agler, of Van Wert, Ohio, spoke on "The Photographer and the Dealer." He urged the manufacturer to make better goods, photo-supply dealers to make prompt shipment and assist the photographer; to devise systems and to practise business-methods; to withdraw credit when the photographer cuts prices; demonstrators really to demonstrate and educate the photographer. He encouraged photographers to be proud of their profession, to get together, and that friendships be founded upon business and not business founded upon friendships, if one would attain the highest success.

Wednesday, at luncheon, Mr. L. D. Field, assistant advertising-manager of the Ansco Company, Binghamton, N. Y., talked on "Advertising," illustrated by lantern-slides. He advised the use of pictures in illustrating advertisements, and said that "a strong picture equals a million words." He also recommended bold headlines and plain, readable type; a trade-mark well displayed and connected with one's name; recommended constant advertising, making for reputation, exciting interest and creating desire. On Wednesday evening a theater-party was given.

Thursday the assembly listened to a very able address by Dr. Wm. T. Stuchell, on "The New America." It was a sound business-talk for business-men, and received hearty applause.

Annual Banquet

The annual banquet and ball, at Hotel Statler, Thursday evening, was the climax of a week replete in all that makes for good fellowship. Speeches were made by Mr. I. L. Nixon, of the Bausch & Lomb Optical Co., Rochester, N. Y., on behalf of the manufacturers; by Chas. H. Huesgen for the dealers; Geo. M. Edmondson, Cleveland, for the photographers; J. C. Abel for the photographic press. At the close of the banquet W. F. Pinkham, of Pinkham & Smith Co., expressed the sentiments of all assembled, and on behalf of them, and as a token of their gratitude and love, presented President Fowler with a massive, leather rocking-chair. A. A. Chilcote was likewise remembered by the association members, and presented with a silk umbrella by F. E. Gatchel, of Louisville. President Fowler was then seated in his chair, when the vocalist of the evening rendered, very beautifully, "A Perfect Day." And a perfect day it was, indeed; for seldom it falls to the lot of any man to merit such esteem and love of his fellows, and certainly Mr. Fowler was greatly honored by those whose interests he had served so cheerfully and faithfully.

The New Board

At the business-meeting, Thursday morning, H. M. Fowler was unanimously reëlected president; W. J. Fuller, Rochester, N. Y., first vice-president; P. Hauenstein (Northern Photo-Supply Co.), Minneapolis, second vice-president; A. A. Chilcote (The Chilcote-Sargent Co.), Cleveland, third vice-president; Robert Lieber (H. Lieber Co.), Indianapolis, fourth vice-president, and F. E. Gatchel (W. D. Gatchel and Sons), Louisville, treasurer. The office of secretary was left open, with instructions to the incoming board to fill the same, preference to be given to a member a resident of the city chosen for the next place of meeting.

1917 Convention

Detroit was unanimously selected as the next place of meeting. Other cities mentioned were Buffalo, Philadelphia and Indianapolis. Louisville was also mentioned, and was placed on record for the convention of 1918.

Recommendations and Commendations

The practice of holding the convention in conjunction with some exhibition was endorsed and recommended for 1917. It was the unanimous opinion that luncheons be served at the end of the business-sessions in the future, in view of the resulting sociability and permanent good received from discussions and exchange of ideas. A monthly trade-paper was advocated, to be the official organ of the association, through the general circulation of which greater publicity could be had and the best interests of the photographic supply-business promoted. This was left to the incoming board for its consideration and disposal. Dealers in their respective localities were urged to get together and adopt adequate and uniform prices for the developing and finishing of amateur work; also local and sectional associations were advocated. A salary and share of the profits was recommended as the best plan to compensate employees, ensuring their loyal support, and serving the best interests of all. American manufacturers were urged to enter into those larger fields of endeavor, and to produce those articles now made in Europe, thus supplying American-made goods, the lack of which was working a great hardship to American industries as well as to photography. The Stevens-Ayres bill was heartily indorsed, and members were requested to urge upon their Congressmen its early passage. Resolutions were adopted commending the Executive Board, the Cleveland Photographic Dealers' Association, Ladies' Committee, speakers, stock-house and manufacturers' publications, and the photographic press for their liberal support given the association. The hotel and exposition managements were also commended for their share in the success of the 1916 convention and exhibition.

The Industrial Exhibit

The industrial exhibit, while not so great and varied as last year's, was large and good. The exceptions, of course, were the many articles of foreign manufacture, although these firms were represented by the American agents. The war has caused not a little hardship to consumers of photographic goods and materials, especially the lack of chemicals; one firm had a fine display of bottles, but, sad to relate, they were empty. Only two motion-picture machines were displayed — a great falling-off from last year. The most notable exhibits were made by the Ansco Co., Central Dry-Plate Co., Bausch & Lomb Optical Co., Hess-Ives and Herbert & Huesgen Co., Inc. The latter firm showed the very efficient and practical "Duplex Rotary Automatic Print-Dryer," having a capacity of 72,000 square inches per hour. It is run by electric motor and dries prints in three minutes. The Hess-Ives exhibit of color-photography — a process of reproducing, in any number, prints of objects or persons in the colors of nature — was very interesting. The Central Dry-Plate Company's display was fully up to the standard set at the last annual convention of the Photographers' Association of America, by this firm, and was the only one of the big dry-plate companies represented. The Bausch & Lomb Optical Company maintained a small theater, wherein their various projection-apparatus was shown in actual operation. The Ansco Company had an immense space, and was easily the greatest attraction of the entire exposition. One-third of their space was taken up with an immense pyramid, the trade-mark of this concern. It surely accomplished its purpose of coupling, in the public mind, the Ansco Company and the hand-camera. Their picture-display was mainly enlargements from small film-negatives on their Enlarging-Cyko paper. Another very beautiful display was their "Loveliest Women Contest Portraits," done in color by the Savigny Company, of Detroit.

The full list of the manufacturers and dealers represented, together with the products shown and the men in charge, follows:

Allison & Hadaway Corporation, New York, importers. J. W. Allison and E. G. M. Plank, present. Marion Record Plates and Marion Fine-Grain Copying-Plates and transparency-display by noted English photographers; Newman & Guardia Cameras; Stanley and Skew and Adams Cameras; all high-grade, small pocket-cameras, scientifically accurate; Everseen Primus Graduates, black ground with white lettering; Density-Meter for measuring the density of negatives; Non-Slip Printing-Frame; Panchroma Printer; Panchroma Studio-Light Cabinet, Hypono, hypo-eliminator; Campbell Repeating Flashlight, etc.

Albany Card and Paper Mfg. Co., Albany. F. H. Pilon, Sec'y. Manufacturers of cardboard and photographic mounts.

Ansco Company, Binghamton, N. Y. W. A. Rockwood, J. D. Fields, W. B. Mussen, C. A. Anthony, C. Bolwell, Harold Stone, C. H. Deveney, J. Steinau, E. A. Prentice, J. Bogan and Mr. Briefer. Full line of fifty-eight styles of amateur and professional cameras and enlarging-apparatus using the new "M" tube lighting-installation of the Cooper Hewitt Electric Co.; entire collection of prize-winning portraits, in colors, of the "Loveliest Women Competition;" enlargements on Enlarging-Cyko from film-negatives; professional and amateur printing-machines; etc.

Bausch & Lomb Optical Company, Rochester. I. L. Nixon, C. F. Styles, E. A. Taylor. Complete line of Balopticons for theater, school and home, for opaque and lantern-slide projection; B. & L.-Zeiss Tessar lenses; Convertible Protars; wide-angle lenses; ray-filters; shutters, etc.

Berlin Aniline Works, New York. Geo. L. Barrows. Agfa Products, developers, intensifiers, reducers, etc.

Milton Bradley Co., Springfield, Mass. Photographic trimming-boards.

Geo. W. Brady & Co., Chicago. A. L. Griffen. Paragon X-Ray Plates; X-Ray Developers, etc. A fine display of X-ray negatives was shown.

Burke & James, Chicago. George W. Maekness, Jasper A. Little, Wm. A. Everett, R. Raymond Raymouth. A full and complete line of folding Ingento and Rexo hand-cameras was shown for the first time, and attracted much attention from the discriminate buyer; Voigtländer lenses and cameras were also shown, and the complete line of Ingento sundries, including enlarging-outfits, Nitrogen Portrait-Lamp, Rapid Printer, etc. Demonstrations were going on all the while, both in the booth, in contact-printing and enlarging on Rexo paper. A simple hydroquinone developer was recommended and used, and gave full satisfaction.

Burroughs Wellcome & Co., New York. H. C. Rasmussen. Showing exposure-meter and guide; Tabloid products.

Central Dry-Plate Co., St. Louis. E. F. Long, vice-pres., F. M. Whipple, C. C. Hough. A very beautiful display of photographs by the leading photographers of the country. A very harmonious arrangement of negatives and prints; the prize-winning picture in the professional class, by R. E. Nelson, on Central plates, also the prize-winning picture by Mr. Nelson, of last year's exhibition.

The Chilcote-Sargent Co., Cleveland. A. A. Chilcote, Will A. Hatch, Geo. R. Rodgers, Frank J. Fugent, B. R. Pascal, E. H. Hewins. A complete line of salable goods of all the manufacturers represented at the exposition; also Cosmograph Projection and Photo-Cine Taking-Apparatus.

A. M. Collins Manufacturing Co., Philadelphia. Harry H. Collins, J. K. Harriman, J. T. Fenner, J. M. Evans, M. A. T. Gillbee, Fred Loehman, R. R. Javens. Folders and double mountings, inserts, etc. A complete line of the very latest art-mountings.

Cooper Hewitt Electric Co., Hoboken, N. J. Samuel H. Knapp, C. N. Knapp. Skylight, floor-stands and complete installations for motion-picture work and for studio-lighing, including the new "M" tubes for printing and enlarging; also Home-Portrait Portable outfit.

The Fowler & Slater Co., Cleveland. H. M. Fowler, P. R. Slater, E. C. Eccrozier, William Taylor, C. C. Curtiss, Geo. Bard, A. Forsuch, S. H. Clark, Carl Shattuck, Harold Etz, Ralph Landis. Complete line of professional and amateur supplies. A fine display of enlargements made by the employees of this firm, also three portraits that attracted much attention — some of the first portraits made on wet-plates in Cleveland, by James Ryder, R. Decker and J. Green.

C. P. Goerz American Optical Co., New York. Fred Schmid, F. A. Bohm. Most of the lines of this popular firm were displayed, including a fine showing of Dogmar F/4.5 convertible anastigmat; Celor and Portrait Hypar high-speed lenses; also lenses for color-process work; hand-cameras, filters and other optical goods of the highest quality.

Gundlach-Manhattan Optical Co., Rochester. Harry M. K. Glover, Paul W. Schanz. The principal showing of this firm was professional view-cameras, including their well-known "Banquet" cameras and the new square-bellows Home-Portrait Criterion cameras at $18 for 5 x 7, $20 for $6\frac{1}{2}$ x $8\frac{1}{2}$ and $22 for 8 x 10. These were shown for the first time, and attracted considerable attention, appealing especially to the semi-professional portrait-worker.

Harvey Exposure Meter, Chicago. Geo. L. Harvey. A new meter with which to gauge exposures, and based on actual practice on a great variety of scenes and objects taken all over the country, and on a great many different plates and films of varying sensitiveness. It is arranged for the H. & D. system of plate-speeds, and is thoroughly practical.

Herbert & Huesgen Co., Inc., New York. H. Herbert, C. H. Huesgen, S. L. Gates. This firm centered all its attention on the Duplex Rotary Automatic Print-Dryer, which filled the booth. The many advantages of this particular dryer are "eliminating of blotter-waste, cheese-cloth racks, handles all sizes of prints indiscriminately, handles panoramic enlargements of any length, prints delivered 'bone-dry,' flat and free of tendency to curl; price, $250." A new hand-camera was also shown — the "Auto-Fixt-Focus," which may be focused from the outside of the case, before opening the camera.

Hess-Ives Corporation, Philadelphia. Henry Hess, pres., Wilbur Curtis Smith, T. B. Heller. Cameras and lenses from 3¼ x 4¼ to 5 x 7 were shown, together with filters, plates and dyes.

Ilex Optical Co., Rochester. Morris Rosenbloom. High-class and mechanically perfect shutters (Ilex Acme, Marvel, Universal and General), working after the mechanism of a watch and not dependent on springs, as in other makes. Every exposure at a certain speed is bound to be like every other exposure when set at the same speed.

Imperial Brass Manufacturing Co., Chicago. C. F. Schroyer. The Imp Flashlight was demonstrated, and is said to be the best device of its kind for rapid work, arresting instantly action of whatever speed. It is recommended especially for wild-animal-photography at night, but answers equally well for any work where an open flash is desired.

International Photo-Sales Corporation, New York. H. M. Bennett. This corporation is agent for the famous Ica cameras, Kinograph motion-picture cameras, etc. Unfortunately the exhibits for this firm did not arrive, and nothing was shown.

J. W. Johnston, Rochester. A new watercolor fluid of snow-white purity for writing on mounts, show-cards, etc. For use with pen, brush or air-brush. It will not smut, dries hard and should be a great aid to the embellishment of photographs. It mixes readily with water, and sells at 25 cents the sample jar.

The Kiograph Co., Inc., New York. Frank W. Cann. Photographic specialties, including self-toning transfer-paper, which may be printed and transferred to any surface.

W. J. Lafbury Co., Chicago. Sole American agents for the G. Rodenstock Lenses — Eurynar, Clanbury, etc., fitted to the Ilex shutters. This firm handles also the Ansco, Korona, Clanbury and New York Studio outfits fitted with these imported lenses. On account of the war, however, it is almost impossible to keep a full stock.

R. J. Fitzsimons, New York. United States agent for Lumière-Jougla Products, Autochrome color-plates, etc.; also the Richard Verascope for taking stereoscopic pictures in colors; the Richard Taxiphote for viewing color-plates made with the Verascope. These are two wonderful instruments, and show the true stereoscopic effect in the colors of nature. The exhibit shown here was the identical one shown in the French Fine Arts Building at the Pan-American Exposition. In addition to the taking- and viewing-apparatus the exhibit included many very beautiful Autochromes, the cream, perhaps, of those shown in this country. No difficulty to get Autochrome plates, which are of standard quality, despite the war.

National Carbon Co., Cleveland. W. R. Mott, B. Perris, A. G. Summerell, P. P. Bethea. White-Flame Carbons for all classes of photographic and photo-engraving work where a highly actinic light and perfect color are required. The power of one 30-ampere flame-lamp equaling seven enclosed arc-lamps.

National Lamp Works of General Electric Co., Cleveland. L. C. Kent, W. E. Bruster, J. R. Colville. Photo-Studio-Lighting Outfits; Blue Mazda Bulbs of 1,000 watts, two units of which are said to be equal in practical value to the ordinary skylight. A general line of electric bulbs from 10 to 1,000 watts was shown.

Northern Photo-Supply Co., Minneapolis. Peter Hauenstein, Chas. Kastenholz. Specialties shown were the Northern Print-Dryer and the Perfection Developing-Tank, providing the latest and most economical way to develop films. Points: saving in time, chemicals, labor and money — surely, desirable qualities. "The Retouching-Eliminator"— a glass screen to be placed in front of the lens in making enlargements — was another practical device.

Pohs Mfg. Co., Inc., New York. M. S. Pohs. "Boudoir Albums," in various cloth-coverings and some bound in leather, were shown; also high-class, hand-sewed and leather-lined folding camera-cases.

Presto Mfg. Co., Pittsburgh. S. S. Loeb, H. L. Solomon. A full line of Infallible Tinting-Masks; also Duplex Printing-Machine and Tripod-Cane.

Seneca Camera Mfg. Co., Rochester. F. R. Townsend, B. MacCallum, G. C. Bishop, A. A. Holt, G. Murdock, C. C. McDermand. The new cameras were the Vest-Pocket and Seneca Jr. No. 1. A fine display of Argotone slow-developing-paper prints, also Enlarging-Argo prints. Canes were given to all friends of the company.

Simplex Photo-Products Co., Richmond Hill, N. Y., and Morris Park, N. Y. A. H. Hotte, B. J. Nasief, J. G. Boyd. Alamo Motion-Picture Camera; Multi-Exposure Camera, taking from 400 to 800 exposures at one loading; Multiflex Enlarger; Simplex Twin-Arc Light, from 10,000 to 14,000 candle power; and other Simplex specialties.

H. C. White Co., North Bennington, Vt. Harric C. White. Radion Professional Enlarger; Radion Professional Studio-Lamp and other Radion specialties of exceptional worth to the worker in the studio or in the home.

Wollensak Optical Co., Rochester. J. A. Dawes, F. E. Lane. This line now consists of two new additions to that already full line of incomparable lenses and shutters, American-made, and are Series 1 Velostigmat, F/6.3 triple-convertible and uncemented, and at the former price of the old-style convertible; also a new Process Anastigmat, fully corrected for color, for photomechanical work. All shutters, with the exception of the two larger sizes in the popular Regno series, now have full star-openings, and the new Studio-Shutter is now fitted with antinous release, as well as for bulb. It works very easily and is virtually noiseless, a necessary quality for studio-practice, especially where children are photographed. Their optically perfect and true Ray and Differential Ray-Filters and Anastigmat lens-cells of F/7.5 fit the usual shutter on hand-cameras and take the place of the usual slow R. R.; also Auxiliary lens-sets are becoming more popular each day with the discriminating camera-users.

The Picture-Exhibit

The picture-exhibit was of better quality than heretofore, and showed painstaking care on the part of the exhibitors to accomplish something really artistic.

The raising of the standard whereby only such pictures as merited a rating of 75 percent were hung undoubtedly was a good move. Over 700 prints were submitted, out of which only 105 were selected and hung in the professional class and 167 in the amateur class. The jury of competent and impartial judges — Charles Lewis, Charles Batam and G. Hanmer Croughton — certainly worked hard to place the exhibit on a high plane. The amateur work was mainly landscapes of the impressionistic school, and in composition, tonal values, and atmosphere and feeling would do credit to many painters, engravers and etchers. The professional class showed great variety in treatment and style, and it would seem that the "freaky" cross-lightings have failed to satisfy, and that professional photographers are still searching for the ideal in portraiture.

The Awards

In the professional class, the first prize, $50, was awarded to Mr. R. C. Nelson, Hastings, Neb., for his portrait "Doris and the Soap-Bubble." The second prize, $25, was awarded to H. Krebs, Washington, D. C. Five other prizes, of $5 each, were awarded to Kehres Studio, Cleveland; Rembrandt Studio, Philadelphia; B. Frank Moore, Cleveland; Clarence Stearns, Rochester, Minn., and to Clifford C. Norton, Cleveland. In the amateur class, first prize, $50, was awarded to W. T. Higbee, Cleveland, for his street-scene "A By-Street in Lucerne;" second prize, $25, to L. E. Wright, East Orange, N. J., and five other prizes, $5 each, to Albert F. Snyder, Utica, N. Y.; T. H. Martindale, Philadelphia; E. R. Stancliff, Los Angeles; C. F. Rodgers, Conneaut, Ohio, and W. H. Porterfield, Buffalo. In addition to these awards all other pictures hung were awarded a Diploma of Merit. The prizes for lantern-slides of window-displays by the dealers were withheld on account of the small entry. Other picture-exhibits were a display in the booth of the Cleveland Dealers' Association, and consisted of individual photographs of each member, and a complimentary exhibit by Cleveland photographers, including Kehres, Growe, Krueger, Newman, Wade, Park, Butler, Bowersox, Miller, Elton and Superior Studios, also by Rynold H. and Rolo F. Krumhar, S. E. Webb, Myrtle Boyer, George M. Edmondson, Clifford Norton, Frank A. Bill, Carle Semon and B. Frank Moore.

The Photographic Press

The photographic press was well represented — all the largest and best publications giving every attention to the convention and exhibits for the benefit of their readers. Those present were J. C. Abel, of *Abel's Weekly;* Frank V. Chambers, of *The Camera;* F. R. Fraprie, of *American Photography,* and David J. Cook, representing Photo-Era.

The Program

Tuesday, March 7, 9.30 a.m.

9.30 Address of Welcome
Hon. Harry L. Davis, Mayor of Cleveland
9.50 Response — F. E. Gatchel
10.00 Annual Address — President F[illegible]
10.30 Secretary's Report
10.35 Treasurer's Report
10.40 Appointment of Nominating-Committee, Committee for Place of Meeting, Resolution-Committee, Exhibitors' Committee, Auditing-Committee
10.45 Report of the Developing- and Printing-Committee — J. W. Allison, Chairman
11.10 "The Proper Compensation of the Store Salesman" — Chas. E. Huesgen
11.30 "Profits" — A. J. Leitch

Luncheon, 12 o'clock

12.30 "The Photographer and the Dealer" — D. E. Agler

Afternoon and Evening

Exposition of Photographic Arts and Industries
Coliseum — 1 to 11 p.m.

Wednesday, March 8, 9.30 a.m.

9.30 "Practical Demonstration of the Sale of Photographic Goods"
Under direction of W. A. Hatch
10.50 "The National Photographers' Association and the National Dealers' Association" — L. A. Dozer
11.00 "The Stevens Bill" — Geo. A. Waddle

Luncheon, 12 o'clock

12.30 "Advertising " (Illustrated) — L. D. Field

Afternoon

Exposition of Photographic Arts and Industries
Coliseum — 1 to 11 p.m.

Evening

Theater-Party for Members and Ladies

Thursday, March 9, 9.30 a.m.

"Why Men Fail" — J. C. Abel
"Color-Photography" — Henry Hess
Report of Nominating-Committee, Committee for Place of Meeting, Resolution-Committee, Exhibitors' Committee, Auditing-Committee
Election of Officers
Unfinished Business
Awarding prize for best-trimmed window ($25)

Luncheon, 12 o'clock

"The New America" — Dr. Wm. T. Stuchell

Afternoon

Exposition of Photographic Arts and Industries
Coliseum — 1 to 11 p.m.

Evening — 7 o'clock

Banquet (informal), to be followed by dancing

A High Tuition-Fee

The highest tuition-fee ever received at the College of Photography, Effingham, Ill., was paid, recently, by Mr. Francisco Arrieta Vizcaino, of Guadalajara, Mexico, who enrolled for the Three-Color Course. As the Mexican dollar, at the present time, is worth only four cents in United States currency, the cost of his enrolment, in the money o[illegible]
$5,500!

Practical Lessons in Photography

Our readers, whether professional or amateur, will derive much benefit from our account — necessarily brief — printed elsewhere in this issue, of the demonstrations made at the annual convention of the Professional Photographers' Society of New York, held on February 29, March 1 and 2. The men who presented these object-lessons are craftsmen who hold a high position in their profession, and though their remarks are given in a succinct form, they will provide food for serious reflection and thought, as well as emulation to many a serious worker. Both the technical and business-aspects of professional photography were treated.

Photographers' Association of America

The thirty-sixth annual convention of the P. A. of A. will be held in the Wigmore Coliseum, Cleveland, Ohio, the week of July 24. In view of a general demand from photographers in all sections of the country for information and suggestions showing how to make the business more successful from a financial standpoint, the Executive Board of the P. A. of A. decided to make the program of the Cleveland Convention full of business from beginning to end.

The first requisite of a successful business is service — satisfaction to the patron in every particular, to which end the photographer should be helped to make better pictures. With this purpose in view there will be the usual exhibition of pictures, for which every member of the association is invited to send prints.

The exhibits will be judged and rated by three competent judges (selected by a postal vote of the membership). Rating-cards with criticisms will be mailed to each member after the convention.

Professor Edward Lake, instructor of art at the University of Illinois, will lecture on "Art-Principles as Applied to Photography." Those who heard Professor Lake last year will remember that he gave a very comprehensive and instructive talk, and his message this year will be even more helpful.

L. B. Jones, of the Eastman Kodak Company, will lecture on "Studio-Advertising." There is no man in the country better qualified to tell the photographer how to advertise his studio and his business, and how *not* to do it, than Mr. Jones.

Tim Thrift, of the Multigraph Company, will give us some timely suggestions in his lecture on "Direct-by-Mail Advertising."

C. H. Claudy, the well-known writer and lecturer on interesting photographic subjects, will use for his subject, "The Photographer as a Business-Man."

Anderson Pace, of the Produce Terminal Exchange, Chicago, will talk on "Personality in Business."

W. H. Bass, of Indianapolis, one of the most successful commercial photographers in the country, will talk on "Building a Business." This lecture is more particularly for the commercial men.

Then there will be a query-box and symposium led by "Billy Sunday" Agler, which is sure to be lively, interesting and instructive. If you are one of the timid ones who cannot talk in public you may write it and put it in the box. This will be one of the most instructive and helpful numbers of the program.

The formal demonstrations will be by Pearl Grace Loehr, of New York, and Edward H. Weston, of Tropico, Cal. With her regular assistant, Miss Loehr will show us how she makes the beautiful home-portraits which have made her work so popular. Mr. Weston specializes in pictorial portraiture, which has won for him [illegible] th here and abroad.

[illegible] beautiful pictures of women [illegible] in the gardens and on the lawns, by Clifford Norton. Mr. Norton has consented to make some sittings in one of the parks of Cleveland some afternoon during the convention.

Mr. Heiser, one of the successful commercial photographers, will demonstrate how he handles *objects* that are particularly difficult to photograph. This demonstration, particularly instructive to the commercial men, will interest everybody.

One hour each morning will be spent under the light with several of the best-known camera-men. Each man will show some stunt that he has found helpful in his every-day negative-making. Their names will be announced later.

A background-expert and colorist will be kept busy working-in backgrounds on negatives and prints by hand and with the air-brush. The demonstration will be informal, and members are expected to ask questions.

Receptionists will be on hand to show how to sell pictures, how to show proofs, increase orders and how to get from every sitting you make as large an order as it should produce.

The manufacturers and dealers have never had such facilities to make an impressive show as at the Coliseum. There are 65,000 square feet of floor-space all on one floor. The entrance is directly in the center of the building, so there will be no choice of space.

Among the entertainments planned, the manufacturers and dealers — who entertain us so royally each year — are going to take us to Cedar Point for a day's outing. Cedar Point, the "Atlantic City of the West," is about four hours from Cleveland by boat, or one and a half hours by rail.

The above is an outline of what the Executive Board has planned. More detailed information will follow. If this program appeals to you, get busy on your picture-exhibit, begin to save your dimes and arrange to be in Cleveland from July 24 to 29 inclusive. Everybody will be welcome.

L. A. Dozer, *President.*

Bucyrus, Ohio, March 3, 1916.

A Substitute for Platinum

It is reported that on January 28 Dr. William B. Phillips, President of the State School of Mines, announced at the Denver Chamber of Commerce that in tungsten and molybdenum a substitute for platinum had been found in Colorado. Dr. Phillips stated that samples of these minerals were being received almost daily, and that the finding of a platinum substitute was especially timely because the price of platinum had gone up to $130 an ounce with none to be had.

Efficiency-Test for Photography-Students

As a means to increase efficiency among the students of the Illinois College of Photography, President Bissell inaugurated a test whereby each one was requested to hand in a schedule of his time for the week. The prize was given to Mr. W. Thorne Henderson, star basket-ball player, of West Liberty, Iowa, who divided the 168 hours of the week as follows:

Sleep	65½	hours
Meals	12	hours
College attendance and work	32½	hours
Recreation	30	hours
Study	25	hours
Religious services	3	hours
	168	hours

Royal Photographic Society

At the recent annual meeting of the Royal Photographic Society Mr. John H. Gear, the well-known exponent of the oil-process, and a teacher of photography, was elected president, much as the great majority of members regretted at this time to lose the former incumbent, Mr. Furley Lewis, who was not a candidate for reëlection, yet whose striking personality has given to the proceedings of the society a lightness and picturesqueness which have proved exceedingly refreshing in this critical period. The Duke of Newcastle and Dr. Atkin Swan were elected vice-presidents, and the newcomers to the Council were Mr. F. C. Boyes, Dr. G. H. Rodman and Captain Owen Wheeler.

Brooklyn Institute of Arts and Sciences

The twenty-sixth annual exhibition of the Department of Photography of the Brooklyn Institute of Arts and Sciences will open on Thursday evening, April 27, and continue until May 21.

The Department is fortunate to have been able to obtain the Tissot Gallery of the Brooklyn Museum, on the Eastern Parkway, a better gallery and in a more central location than has been possible in the past. The exhibition will be open to the public daily from 10 A.M. to 6 P.M., on Sunday afternoons from 2 to 6 and on Thursday evenings from 8 to 10.

As there is ample room this year to accommodate exhibition-prints, it has been decided to make this a noteworthy anniversary, and, breaking with former custom, which required absolutely new pictures, to give this exhibition the character of a review of the work that has been done by the studio and Department-members. This will give the public a better idea of the really excellent and serious work that is being done in Brooklyn, as each exhibitor will have the opportunity to present a number of examples of his best work of several years, instead of being limited to the work of the past twelvemonth. In addition, the Department will make this an opportunity to return many past courtesies by inviting some well-known workers to exhibit who are not members.

In order to prevent too great congestion of the galleries and hanging-space, Department-members will be limited to six pictures, and invited exhibitors, non-members, to three. To assure uniformity of presentation and unity in the exhibition, the pictures are to be mounted on standard-size mounts of a uniform, light tone, and shown under glass without frames. A private view and reception will take place on the opening night, when the members will entertain the usual large number of guests.

As there are workers of marked individuality in the Department, a strong and interesting exhibition is assured. It is fortunate that so excellent a gallery has been obtained, for these workers have suffered in the past from a lack of opportunity to show their work to other than a limited circle in their own city, and consequently they are not as well known there as the quality of their work deserves. As the Department has always aimed at the development of its newer members, feeling that group-work is more valuable than direct teaching, the exhibition will doubtless disclose a number of new workers, and should serve to attract outsiders to membership in that remarkable organization — the Brooklyn Institute.

A Substitute for Opal

An emulsion of a pure white character, which can be poured upon glass to form a substitute for opal, can be made by means of zinc oxide and gelatine. There are formulæ which describe the making of such an emulsion with barium sulphate; but this is not satisfactory, as, although the sulphate is itself a dense white opaque powder, it appears to form a kind of solution in gelatine, and as it dries it loses a great deal of its opacity.

Zinc oxide is obtainable commercially, and for this purpose half an ounce of it may be ground up into a smooth thick cream with a mixture of two parts of water with one of glycerine.

Half an ounce of any ordinary gelatine is left soaking in four ounces of cold water until quite soft, and is then dissolved in the water by standing the vessel containing it in a basin of hot water. The zinc oxide mixture may also be heated in the same way, and then stirred into the gelatine. When the two are thoroughly incorporated the white creamy emulsion is strained through a couple of thicknesses of fine muslin, and is ready for coating onto the glass.

For this operation a leveling-stand is a necessity. It may be made of a piece of plate glass, or a slate or marble slab, supported on three wooden wedges until its upper surface is exactly level. It is a convenience to wind thin string around it about an inch apart, so as to keep the glass plates from touching the surface of the slab, to which they might adhere if any of the gelatine had been spilt on the back of them. In any case the strings, which must not cross each other on the top side of the slab, or the glasses will no longer be level, also make it easier to pick up the glasses.

The gelatine emulsion is strained into a vessel with a lip, and a pool of it is then poured onto the glass, which is tilted until the mixture flows all over it, and is placed on the leveling-slab to set. When set, the glass can be stood on edge, away from dust, for the coating to dry.

Any one unaccustomed to handling gelatine solutions will find the operations are much easier if attention is given to keeping the mixture warm. It should never be put into a cold vessel; the funnel used in filtering it should be put into hot water for a few moments, the muslin wetted in hot water and squeezed out and the glasses warmed before coating them.

If there is any difficulty in working as just described, the coating may be done by putting the glass on the slab, then pouring on the mixture and guiding it over the plate with a glass rod.

E. Legge, in *Photography and Focus.*

Hydroquinone Without Metol

Now that Metol and similar substitute developers cannot be obtained in the open market, the Eastman Kodak Research Laboratory has taken up the matter of using hydroquinone alone for development-papers. Whereas there is no hope of early relief so far as Metol substitutes are concerned, hydroquinone is being manufactured in the United States in increasing quantities with good prospect that the supply will keep pace with the demand. It has been found that hydroquinone provides a satisfactory agent for all development-papers when the proportions of sodas and bromide are right. The formula recommended for Artura Iris follows:

Water	30 ounces
Hydroquinone	100 grains
Sodium sulphite, anhydrous	200 grains
Sodium carbonate, anhydrous	3½ ounces

Dissolve chemicals in the order given

Add one drop of a saturated solution of potassium bromide to each ounce of the above developer.

For Azo, Artura Carbon Black, Carbon Green, Non-Curling and Chloride, also for Velox or Eastman Permanent Bromide papers used for commercial work or amateur finishing, the same developer may be used by adding one drop of a saturated solution of potassium bromide to each *three* ounces of developer.

At the proper temperature of 68 to 70 degrees Artura and Velox images have the appearance of overtiming at the beginning of development, but will clear and build up as development goes on.

◆

The invention of photography has revolutionized art as railroads have revolutionized industry.

Alfred Stevens.

Eliminating Foreign Words in Germany

This question has received a great deal of discussion in Germany during the past eighteen months, and has been treated in many cases with more zeal than judgment. Prof. Dr. Paul Hildebrandt considers the matter from a common-sense standpoint in an article in the *Vossische Zeitung*, from which we make the following extracts:

"Each idiom is the expression of the civilization of a people. This, however, is doubtless the continuation of older civilizations. Thus our language is rooted in the old Greek, Roman and other civilizations, and we cannot do without words borrowed from them, especially in the sciences. These borrowed words, although originating in foreign languages, do not injure or change the character of our tongue. In so far as they still retain their foreign form they should be Germanized. That is the idea expressed by Hans Delbrück in his pamphlet *Die Sprachvereinigung: Fürst Bismarck und Heinrich von Trietschke* ('Language-Unification: Prince Bismarck and Henry von Trietschke'). Only in this way can we be sure that the wealth of words which comes to us from foreign sources shall be assimilated, enriching our language, our world of ideas and our civilization. The capacity of the German language to absorb and digest such foreign ingredients is an indication of its strength, in which we should rejoice instead of condemning it."

Both Hildebrandt and Delbrück protest strongly against the position that only that should be considered as genuine German which avoids the use of foreign words. This amalgamation with the political question is as absurd as the demand that neither English nor French shall be taught in our schools any more because we are waging war with England and France; but it is bad that the authorities should also be baited into the driving out of foreign words. The language of the people, however, cannot be made by the police.

Hitherto we have conquered our enemies because we have adopted from their civilization that which would tend to enrich and ennoble our own. If in the future we reject the culture and linguistic accretions of foreigners, the result would be an impoverishment of our own culture and speech. Our civilization and our language have demonstrated their strength. Let us allow them room for free development, and teach the people how to use that strength, but not by the arbitrary exclusion of foreign terms. It would be doing Germany an ill service to build a Chinese wall around her civilization or her language. Delbrück's brochure, which has developed and established this view more fully, is therefore to be welcomed with satisfaction.

Photographische Industrie.

Errata

Two unfortunate errors crept into the article entitled "Fixing-Baths Up to Date," by E. J. Wall, F. R. P. S., in the March issue. The eighth line of page 122 should read: "but if we take 50 ccs. (1¾ ounces) of the above —" This makes the formula correspond to the conclusive statement in the last paragraph of page 125.

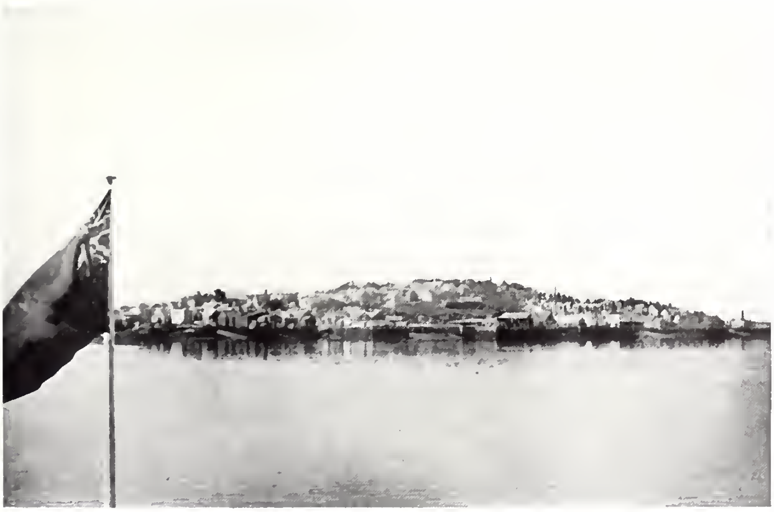
Where Is This Place?

Inasmuch as the maker of the print below challenges the editors of Photo-Era to identify this "island"— and we do not hesitate to admit our inability to comply — we consider it equally fair to ask our readers to send us their answer to the above query. To every person who sends us a correct reply — except, of course, anybody who lives in or near the place — the Publisher will send Photo-Era for one year, beginning with January, 1916, the offer being open until June 1, 1916.

Copyright of Photographs

The copyright law is different from what it was several years ago, and, although couched in complicated terms, is quite simple.

There are two forms of registration — one for photographs that are to be published, which requires that two copies of the photograph accompany the application; and one for photographs that are not to be published, and which requires but one copy. If a certificate of copyright is desired, a fee (in the form of money-order) of $1 must be sent, the receipt of which will be acknowledged by the Register of Copyrights. Nevertheless, after a photograph has been registered without the certificate, the latter may be obtained at any time later by sending in 50 cents additional, also in the form of a money-order, as cheques, of any kind, are not accepted by the government. In any case, 10 cents additional must be sent for the necessary documentary stamp. Application-blanks, to suit every case, may be obtained from the postmaster or from Washington, and all matter relating to copyrights is to be addressed to the Register of Copyrights, Washington, D. C. Some of the many benefits resulting from copyright by professional workers are mentioned in another item, on page 198.



WHERE IS THIS PLACE?

Third Annual Pittsburgh Salon

The Photographic Section of the Academy of Science and Art, Pittsburgh, Pa., opened the Third Annual Salon, of 299 prints of splendid quality, making one of the best, if not the best, exhibitions of national photographic art ever held in this city. Uniformity of excellence, absence of contributions dependent on the bizarre to attract, and of monotonous themes presented so much at other exhibitions make this one a delight to the layman and the connoisseur.

As a printing-medium, gum seems to be growing in favor, the quality of the exhibits justifying the choice, though in a few cases the amount of brush or other work has destroyed the photographic quality too much. Other processes are represented in about the usual ratio.

The use of soft-focus lenses, either to produce results directly or as an accessory in copying or enlarging to produce the finished results, is now almost universal. I believe that this exhibit shows that the proper use of diffused focus is better understood than heretofore, and that the diffused-focus lens has been improved to overcome the defects that were so apparent in pictures made with the earlier forms of this lens.

California particularly, and the Pacific Coast, have a large representation, about seventy prints in all, of which, as might be expected, the Exposition or some feature of it is a frequent *motif.*

Naturally Pittsburgh artists are well represented, thirty-four prints in all being credited to them. N. S. Woolridge and Reuben Miller, Jr., have a number of landscapes and evening-effects of a high standard of excellence. Nunya Seldez is represented by six carbons showing strength and versatility. "Head of a Bedouin" fills the picture-space well with the lights properly distributed; "Before a Bath" is a nude that does not evade the issue by excessive diffusion or sheltering shadow, and yet is delicate enough to please the most conservative. J. L. Phillips has only one print, "After a Storm in the Rockies," but it is a well-composed portrayal of the conditions expected, without the exaggerated darkness used so often to give the impression. Thomas Hartley's "Autumn Haze" is a nice delineation of country-landscape with the atmospheric quality indicated by the title truly rendered.

Our well-known exhibitors are nearly all represented by work of distinction. Goldensky shows five prints; a portrait of a violinist is a fine composition, with every touch of light from the head to the outstretched hand in the proper strength and place. A nude in red chalk we should rather see in another color. W. A. Hudson shows four multiple gums, of which "The Old Altar" pleases the best. Dr. E. O. Jellinck, of San Francisco, has a number of night-effects of architectural beauties of the Exposition showing fine craftsmanship. T. W. Kilmer's "Along the East River" is an example of good composition, and shows a proficiency in the use of the diffused-focus lens in keeping a certain amount of life in a low-keyed landscape. MacNaughtan's exhibit contains only one landscape in his masterly style, with which Photo-Era readers are familiar. His "Mennonite Maid" and a study of a head lose nothing by comparison with his other work. A. P. Milne's "Morning-Sunshine" is a dainty little breakfast-scene with the spirit of morning-light worked into the picture. Resembling this a little in the quality of the diffusion is W. B. Hollister's "Clay-Modeling." "The White Hat," by the same artist, is an admirable study if nothing else. Forman Hanna exhibits, with soft, melting shadows, a bit of snow in contrast to some others of dusty Arizona. John W. Gillies's "The Gull" is a particularly striking carbon showing a solitary gull in a cloud-filled sky over the city, the bird dominating the whole composition. Louis Goetz is the author of a small platinum entitled "The Dancer," a draped dancing figure emerging from a shadowy wood; poise and placing of the figure and detail through the shadow of the forest make it one of the gems of the collection. Rudolf Eickemeyer has one woodscape of great beauty, and detail in plenty without being distracting. C. H. Christiansen contributes several carbons with whose beauty we are familiar through their publication — "Water-Lilies," with their ivory brilliance, being a delight to the eye. "Christmas-Eve," by Wm. S. Bailey, is dramatic and good work. Karl Struss is represented by four beautiful carbons, one being his well-known interior of the Pennsylvania Station, New York, a wonderfully good example of skill in composition and technique. John Garo exhibits a portrait of a quality one would expect from this talented man. W. H. Porterfield has, among other prints, "The Evening Star," a blue carbon, evincing his liking for pictorial proportions; the sky, the star and the earth are each big enough and just strong enough to create the whole. Dr. D. J. Ruzicka is well represented with five prints, one a favorite theme — a sunny landscape in Central Park, with figures well placed — and a street-scene at the New York Public Library.

Success and Fame through Color-Photography

There is, perhaps, no better demonstration of the success with which an amateur photographer can profit by his ability and resourcefulness than the form of publicity now being given to the Northwest by two amateur camerists — Henry Berger, Jr., and Frank Ives Jones, both of Portland, Ore. These two young men are touring the country under the auspices of the Rotary Club, Chamber of Commerce and the Ad Club, of Portland, giving illustrated lectures on the scenic beauties of Oregon and Washington, including Crater Lake National Park, the Columbia River Highway and Rainier National Park, not omitting the splendid cities of Portland, Tacoma and Seattle. Over 200 lantern-slides, made by direct color-photography, are shown, thus presenting the natural color-schemes, in all their beauty, variety and fidelity, of the great glaciers, forests, waterfalls, snow-capped mountains, sunsets and flora — all forming a galaxy of wonders that merits the designation "The Switzerland of America."

Messrs. Berger and Jones — the former the lecturer, the latter the lanternist — are giving the entertainment, gratuitously, before universities, art-institutions, chambers of commerce, civic clubs, photographic societies — wherever it will arouse genuine and representative interest. It was given February 28 before the Boston City Club, in the presence of a large and distinguished audience, and elicited tremendous enthusiasm.

This form of publicity is the most effective that can be imagined, profitable alike to the localities thus advertised and the two traveling demonstrators. It is simply utilizing photography as the most convincing means of information — bringing before the eyes of the public irrefutable evidence of existing facts, for seeing is believing. Photo-Era, as long ago as 1910, urged amateurs of ability to turn their attention to civic improvement, city-planning and local publicity by means of the camera. Some did it in a half-hearted sort of a way, and little came of it. Mr. Berger and Mr. Jones saw their opportunity, said nothing and quietly produced their material — original photographs, and from these, lantern-slides by direct color-photography. No hand-colored work for them! With such persuasive material as this they found it easy to acquire recognition and success. Who will follow this good example?

LONDON LETTER

CARINE AND WILL A. CADBY

Photograms of the Year 1915 is out at last. Probably, if the true story of the difficulties of publication could be written, it would make quite an interesting article. Paper of the right sort has become scarce and promises to become even scarcer, while the printers in this time of stress and strife have other work allotted to them beyond the careful and sympathetic reproduction of the year's photographic work. But all obstacles have been surmounted, and we have *Photograms* for 1915 in the same familiar size and binding to which Mr. Mortimer (the present editor) has accustomed us during the last few years. The reproductions are as good as ever, and that is saying a great deal. They are all printed either in warm black or sepia on a cream-tinted paper, and a large percentage are full-page. The selection of pictures is most varied. There is work reproduced from all parts of the world, with of course the exception of Germany and Austria; and it is incidentally somewhat curious how little the strong, bold subjects that we used to get from those countries are missed. The gap has been filled by work from other nations that have assimilated the teaching of the Teuton school, and have modified and, in some cases, perhaps improved on it. The war itself seems to have had singularly little effect on the subjects chosen, and the photographer of fifty years hence, when looking through that almost antique volume, *Photograms* for 1915, will find little in the pictures to tell him that they were taken in the year of the greatest war. But present-day fighting does not easily lend itself to pictorial treatment, even if the authorities were willing, and it is doubtful whether photography will have any war masterpieces to show when hostilities cease, except in the way of appalling records of devastation, and marvelous examples of the development of X-ray work, telephotography, and survey-photographs from aircraft.

It is not our purpose to criticize individual pictures reproduced, but we cannot refrain from a mention of M. Robert Demachy's "Behind the Scenes," which alone is worth the price of the volume, being the last word and the newest development in a long series of studies of the ballet-girl by this noted French master. The original, an oil-transfer, was exhibited at the London Salon last autumn, and the beautiful reproduction has retained much of its charm and quality. We have been comparing it with a very old gum-print of a similar subject that hangs on our walls, made by M. Demachy many years ago, and the distance he has traveled in the interval is simply astounding. The suavity and perfection of this latest example of his work is delightful, and from most points of view it is not too much to say that it is the picture of the year.

It may be of interest to note that twenty of the reproductions are from pictures whose authors live across the Atlantic.

As to the letterpress, the editor writes the first article in the book, on "The Year's Work," and amongst many items of interest and information points out that a considerable number of successful amateurs have joined the ranks of professionals, notably Bertram Park (late secretary of the Salon), Malcolm Arbuthnot, Hugh Cecil and Walter Bennington; but probably owing to her not exhibiting this year he missed Mrs. Neilson, an American lady who is running a successful studio for pictorial photography in Bond Street, London, and to whose work we shall refer again in this letter. Mr. F. C. Tilney, whose capabilities for sound and constructive criticism are undoubted, has some illuminating notes entitled "Observations on some Pictures of the Year," and Mr. Antony Guest discourses on "Nature and Art in Photography." Mr. W. R. Bland, who is responsible for "The Vicissitudes of Photography," contributes a humorous discourse on the weaknesses of photographers, tracing their pitfalls from the earliest days. There are also articles on pictorial photography in Canada (H. Mortimer Lamb), Australia (Walter Burke), the United States (W. H. Porterfield), Japan (H. Yahagi), Scandinavia (H. B. Goodwin) and Holland (F. L. Verster).

The second number of *Snapshots*, the official organ of the Snapshots-from-Home-Movement, tells of the progress of the scheme. Both Australia and South Africa have taken it up, and are now sending to their soldiers, at the various fronts, pictures of their relations. The Y. M. C. A. in Canada is also moving in the matter, and it looks as if the undertaking would develop along imperial lines, and be all-embracing as far as the British Empire is concerned.

In the same number of this magazine, so unique and full of human interest, we read of the difficulties that present themselves in proscribed areas to the helpers who are getting photographs for the soldiers. It would hardly be thought that snapshots from home, taken in little back-yards and best front-parlors, can be of any use to the enemy. But the regulations for certain districts are quite clear that no cameras must be carried in the streets, and the only way to get over the difficulty in some towns has been for workers to invite the sitters to their own homes. One large industrial town in the north of England has very happily made a notable exception in favor of the Snapshots-from-Home-League, and members are permitted to carry cameras when engaged in their unselfish and pleasure-producing work.

In the Photographic Salon of 1914 we had been struck by the work of an exhibitor who signed herself Marion Neilson, and were disappointed not to see her work again on the walls at the last exhibition. It is so interesting to follow up clever workers. Sometimes they disappoint us by overdoing just that individual feature which had made their work attractive, or they simply fizzle out; but somehow we had a very safe feeling about Marion Neilson, and were very confident her work would grow in interest. We had heard rumors that this lady had opened a studio somewhere in London, and last week, when sauntering down Bond Street, we noticed her name. "Plucky Mrs. Neilson," we said to ourselves, as we went up her stairs, "to set up a studio in the very heart of London and do professional photography in a war-year."

It seemed, however, as if she had dared fate to some purpose, for she was engaged three or four deep, and we had to content ourselves with talking to what appeared to be either her husband or her brother, for as he referred to her as "Mrs. Neilson," in the American fashion, we were left in doubt. We heard some interesting facts about her: of her art-training, of their studio in San Francisco, the fire, and now this work in London, which had kept her too busy to send to the London Salon last time. He also showed us some fascinating examples of Mrs. Neilson's color-prints which are made by engraving from the portraits and printing in colors. They were certainly beautiful; but this work calls for exceptional gifts, to which patience and a capacity for taking pains belong, as well as the more brilliant ones of talent and skill.

WITH THE TRADE

The Platinotype Paper Shortage

The various "Imperial Orders" of the warring nations abroad commandeering all stocks of platinum for government use has seriously affected the manufacture of platinum paper. Russia, whence comes fully 95 percent of the platinum-supply of the world, started the edict to prevent the metal being sold into Germany. The German order quickly followed as a matter of necessity, the English chiefly because of transportation difficulties. The Russian Government now supplies only the various Allied governments which have refused permission to photographers, manufacturers of dental and other supplies in which platinum enters, to use the metal.

The Platinotype Company, London, makers of the well-known paper for which Willis & Clements, Philadelphia, are the American agents, at once applied for a permit to continue the use of platinum for coating papers; but at present the British Government is making no exceptions to the order, as it is still doubtful that there will be any considerable amount of the metal available for other than military requirements.

Meantime, regular users of Platinotype paper are urged to try another production of The Platinotype Company; viz., Japine Silver, a non-curling, vellum-surface printing-out paper on which any color can be obtained from light brown to warm black. It offers an especially simple and inexpensive process giving brilliant sepia tones. Japine Silver is a rather rapid printing-out paper, toned and fixed the same as other printing-out silver papers, only there is a "Special Toner."

German Industrial Claims in Hostile Countries

The comprehensiveness of the share of German industry in foreign commerce, amounting in some cases to over fifty percent of the entire production, is well known, says *Photographische Industrie*. When this active export business stopped, at the beginning of the war, it was inevitable that there should be numerous claims held by German manufacturers against customers in the hostile countries, and all the more because long credit had been given in many cases. The property represented by these claims has been seized with the object of using it as a forfeit in future peace-negotiations. If the German government should act in the same manner, it is clear that property of its citizens in those countries would be found much greater than in the reverse case. Besides, when the seizures come to be mutually revoked, there is no security that German property in those countries will then be obtainable. It is therefore understandable why inquiries have been increasing lately as to the way in which security might be made possible in order to protect German industry from serious loss. A noteworthy proposition was recently made in the *Kölnische Zeitung*, which laid upon the governments of hostile countries the responsibility for the collection of claims due to manufacturers. Of course, only such claims as had accrued before the outbreak of the war could be considered, and those governments could be held to further responsibility only when a debtor in a hostile country, during or as a result of the war, falls into necessitous circumstances. On the other hand, it is to be assumed that every debtor in those countries who is able to make payment will, taking into consideration the pressure of his government, after the war, fulfil his obligations. It is certainly to be desired in the interests of German industry that there should be unanimity among the manufacturers in regard to the mode of procedure, in order that the government may be able to decide upon a proper course. Another important question is, how are the claims of German manufacturers to be collected in those districts already occupied by German troops?

Retail vs. Mail-Order Business

The fact that certain firms are doing a large and prosperous mail-order business does not deter T. W. McAllister, in *The Outlook* for March 8, 1916, from showing up its deficiencies and presenting the superior advantages offered by the system of distribution through the retail-merchant. This explanation, a truthful statement by Mr. McAllister, in which he concedes certain points in favor of the mail-order business, should be read carefully by every dealer in photographic supplies, as well as by every consumer and prospective purchaser of a camera or a lens.

Says the writer: "The great manufacturers who produce the articles in which the people have confidence, which they want and demand, have long recognized these facts. With few exceptions they steadfastly refuse to sell through the mail-order houses, and market their wares only through the retail-merchant. They recognize the fact that the service which the merchant gives is well worth the price which he must exact."

Accidents in Munition-Factories

According to experience, most accidents occur to new beginners; i. e., inexperienced operatives, on presses, stamping-machines, etc. Foremen should see that such operatives do not begin work until they are fully instructed regarding the working of the machines and the protective appliances attached to them. The foreman must also be sure that the workman or woman clearly understands the explanations and instructions given. He should, moreover, satisfy himself that the machines and protective appliances are in good order, and he must strictly warn all operatives to stop work instantly the moment the machine or protective apparatus fails to work properly. It is advisable that the proprietors demand that their foremen sign a proper guaranty pledging themselves to a strict observance of the above rules as well as general instructions for the prevention of accidents issued by trade-associations. Such a guaranty would increase the foremen's feeling of responsibility. In large workshops it is also desirable that all operatives receive personally adequate written or printed instructions, and that on accepting employment in a workshop they sign an agreement not to begin work on any machine until permitted to do so by the foreman or overseer. The proprietors have a lively interest in that there shall be the smallest possible number of accidents, and should always keep in mind that the total cost of the trade-association to which they belong (and this in addition to the cost of management), and especially the funds to pay for accidents, should be covered by yearly assessments paid exclusively by the proprietors.—*Photographische Industrie.*

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The American Journal of Photography

PUBLISHED MONTHLY

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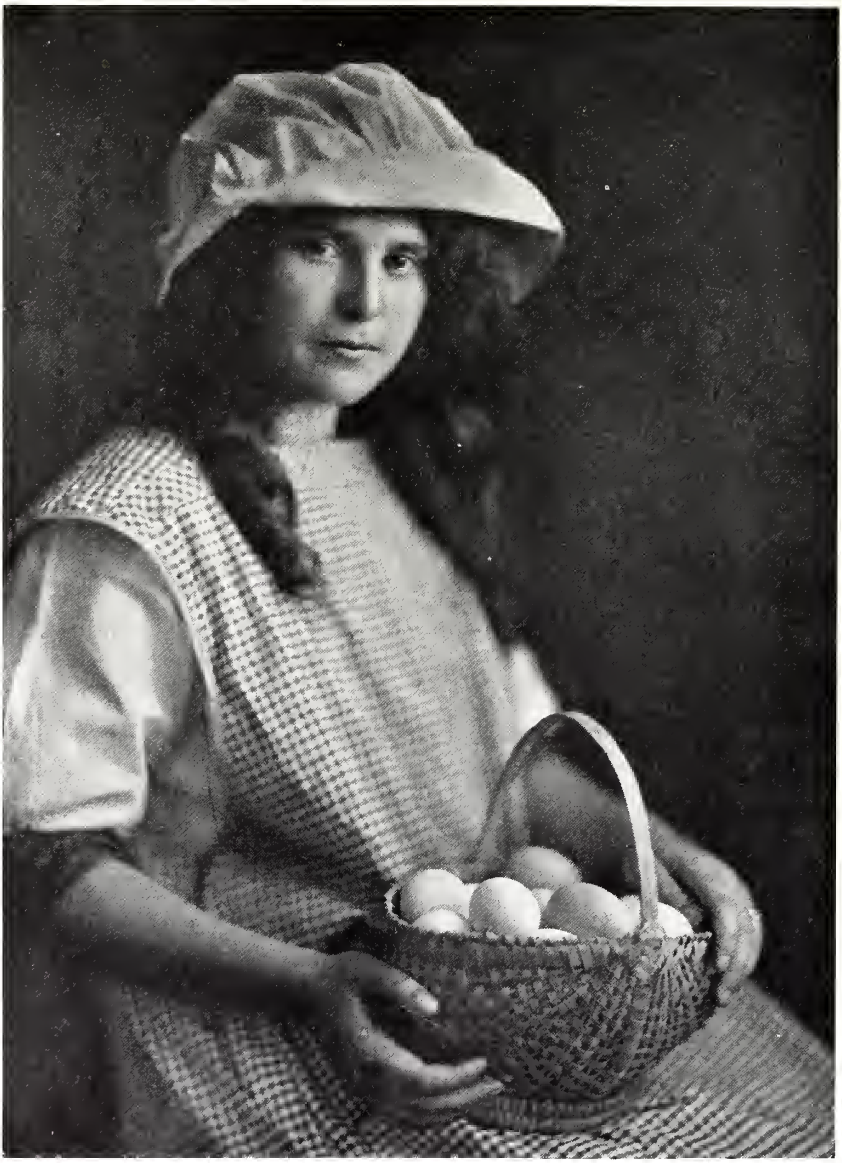

A RURAL MAID
L. L. HIGGASON

PHOTO-ERA

The American Journal of Photography

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Sunshine-Effects

WILLIAM S. DAVIS

HOW often have we found that the charm of some scene which attracted us at a particular time was due to the fleeting effect of sunshine and shadow, this fact being driven home perhaps by the change encountered upon visiting the spot again under other conditions. After a few such experiences every worker aspiring to the production of pictorial results begins to realize more fully the important part played by lighting and atmospheric changes upon everything outdoors, and consequently the need of watching more closely their influence upon chosen compositions.

While a great many scenes are found at their best when direct sunlight is absent, a large number are literally created, so far as pictorial interest is concerned, by the pattern of sunshine and shadow cast on bright days, the charm sometimes centering entirely in those passing effects rather than the permanent details included. Indeed, so quickly do the shadows move and change their shape that a subject is often seen at its best for only a few minutes.

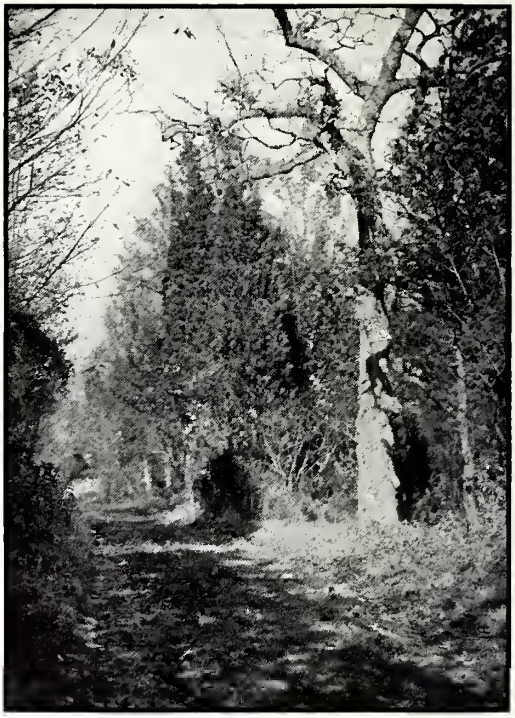
When considering the interpretation of sunshine by photography one must learn to select the effects which come within the scope of monochromatic rendering, otherwise it will be found that many photographs of particularly enchanting effects of great brilliancy to the eyes prove deeply disappointing in their failure to register, even approximately, the impression produced upon the spectator. Here is where one runs up against not only the incorrect translation of colors by the photographic plate, unless assisted by corrective filters, but the difference between *color-contrasts* and those due to *tonal gradation* — in other words, the attractive element is often largely a matter of color-combinations, and unless these are sufficiently different in relative tone-values to permit of retaining something of the comparative intensity seen by the eyes success cannot be expected; hence the value of forming the habit of comparing the relative *tone* of one color with another when looking at a subject.

To make my meaning clearer, it is not unusual in nature to meet with widely differing colors, even those complementary to one another, which upon comparison prove to be of nearly or quite the same tone-value; as, for instance, a landscape with yellow-green foliage in full sunlight, bright red flowers in the immediate foreground, and a background formed by a distinct hillside violet-gray in tint. Now in a case like this it is quite possible for all three colors mentioned to be of nearly equal tone in the broad masses, although the eye would immediately be attracted by the brilliant red flowers and sunlit foliage, the impression being that these were brighter in tone than the distance; but if a photograph were made under such conditions, taking care to use plates and filters that would give a spectroscopically true rendering in monochrome, it is apparent that all must necessarily reproduce alike; while in the average snapshot, taken without a thought of color-correction, the light green and bright red would be shown a number of degrees darker than the violet-gray hillside. Of course the result in either case would fail utterly to give any adequate idea of the impression made upon the eyes by the warm colors.

The question may well be asked — how then can one convey the feeling of sunny warmth and brilliancy without the aid of color in a picture? The answer is, by selecting views which contain a suitable distribution of light and shadow, characteristic of sunshine, independent of any color-combination.

Naturally the photographer's choice of subjects in this field is more limited than is possible for the painter, with sufficient knowledge of the psychological effect of color to make use of, but this cannot be helped, and a successful worker in any medium is the one who respects the limitations of that medium.

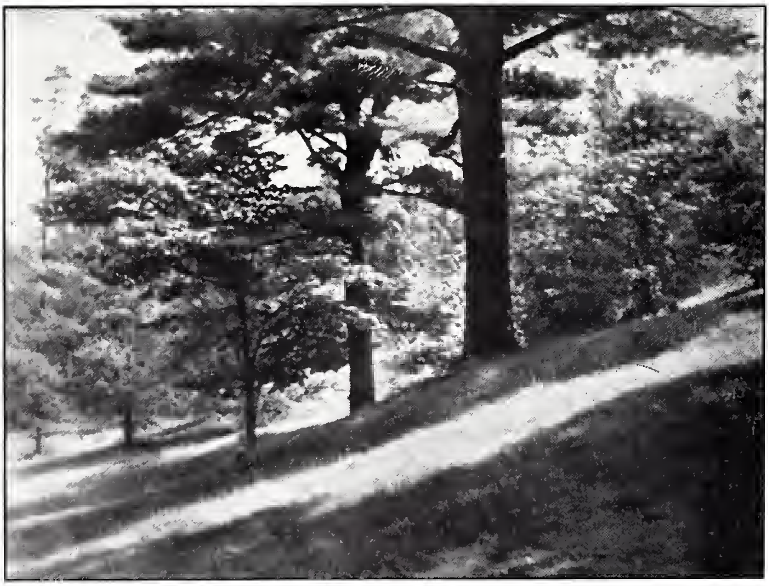
Since strong sunlight falling upon a subject either from one side or toward the observer produces brilliant snappy highlights and distinctly defined shadows, the gradation of which are much flatter in tone than the light passages, this fact gives us some clue to the combination which best conveys the effect of intense light. A point to be thought of in this connection, however, is that the longest scale of tone available on paper from white to black is very much less than the contrasts in the natural scene one may be trying to photograph. Consequently, as our rendering can be only a relative one within the limitation of the scale mentioned, it is necessary to use with care the highest light possible (white paper) if an effect of extreme brightness is required, for the only result of repeating or spreading any light tone over a larger area of the picture is to weaken its intensity; so if the lighter tones are thus allowed to occupy too much relative space one has nothing left in reserve by which to introduce the needed emphasis. The foregoing simply indicates that the maximum effect of strong light is secured by arranging the composition with a view to include just enough extreme highlights to give snap and power in tonal gradation, while the remainder of the picture-space is filled with middle and lower tones of sufficient depth to give the contrast. Marine views taken against the light during morning or afternoon hours, and landscapes with a dark sky-line in contrast to a glowing sunset-sky, are typical examples where extreme concentration of the highest lights naturally occurs; also, among others in which the play of light and shadow often conveys a striking effect, a white building upon which the sunshine falls, picking out all projecting details and casting clearly defined shadows over flat walls.



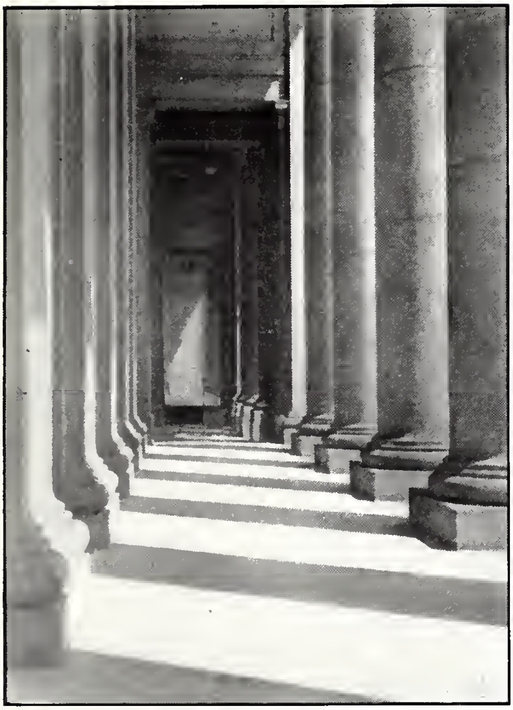
FOREST-SHADOWS WILLIAM S. DAVIS

In the forest the tree-trunks and foliage afford an opportunity for massing the shadows effectively, while the sunshine which finds its way through, flickering and dancing upon the soft carpet of leaves and moss below, or bringing out in strong effect interesting roots and bole of some old woodland monarch against the shadowy depths beyond, gives accent and a feeling of warm sunlight to the whole.

With the arrival of winter's snows some



SUNLIT WOODS WILLIAM S. DAVIS



SUN-STRIPED WILLIAM S. DAVIS

very beautiful shadow-patterns are projected upon the pure surface, especially along the edge of country-roads and woods. Not infrequently the patterns thus formed are quite complete enough to warrant full concentration of interest upon them to the practical exclusion of everything else, except just enough material of deeper tone to indicate their source or furnish the necessary contrast.

AFTERNOON-SHADOWS WILLIAM S. DAVIS

In a somewhat similar way the level surface of a veranda-floor, patio, terrace and the like, often receives shadows from architectural details that furnish material for unique compositions. Especially is this likely to be the case around the arched entrances or colonnaded façades of large buildings. One of my illustrations, "Sun Striped," suggests some of the possibilities in subjects of this nature, although there are, of course, many ways of dealing with them. This was taken on a bright summer's day at the Seventh Avenue entrance of the Pennsylvania Station in New York. The treatment emphasizes the flat decorative element in the spacing of light and dark tones rather than depth or perspective.

As the sunshine motive is produced in so many ways, it is quite impossible to say at what time of the day or season such effects are most likely to be seen at their best, therefore the only useful suggestions I can give now are about the technical means employed to capture them when found.

First, as all tones in nature are composed of varied colors, it is evidently essential, when a composition is met with that contains the desired gradation, to preserve the relationship between tones by obtaining a reasonably truthful translation of the colors composing them. Since an ordinary emulsion is not capable of doing this, the need of orthochromatic or panchromatic plates is indicated, as they are so much more sensitive to the warm colors which compose the highlights of a sunshine-subject. Even they, however, are too readily affected by the cool tints, blue and violet; consequently, when such colors are present to an appreciable extent a suitable ray-filter is also needed to hold them in check, and thus secure a balanced color-rendering. The depth of filter required for absolute correction varies with the sensitiveness of the particular plate or film to different colors; but for ordinary purposes a four- to five-times filter will give sufficiently good correction with orthochromatic emulsions, although it is a good plan to have a stronger one, say eight times, for use when greater emphasis upon bright warm tints is desired.

When plates are used it is an advantage to have them backed or double-coated, on account of permitting greater latitude in exposing, and, when extreme contrasts are present, better gradation at both ends of the scale.

The highest lights, such as sunshine on water or near white objects, are sometimes so strong that the refractive rays thrown off frequently make the edges of details appear blurred to the eyes; so as this is part of the effect in such instances it may well be retained in the photograph by using the lens at a large aperture and diffusing the focus to some degree throughout, the amount depending upon the nature of the subject.

In exposing one has to consider the need of retaining so far as possible the sparkling gradation of the light tones, when the effect is a brilliant one, together with enough detail in the shadows to ensure transparency and atmospheric quality. It is true that the greater the intensity of light the darker the shadows appear by contrast, so the eyes cannot under such conditions accommodate themselves sufficiently to note full detail in both extremes of the scale at the same time, consequently the omission of some gradation in certain parts in order to concentrate interest elsewhere is in accordance with the visual impression; but this must not be overdone, for some gradation and quality of light can always be seen in the strongest shadows, and if this is not retained in the picture one cannot convey the feeling of luminous atmosphere and space between such parts and the spectator.

So much depends upon the particular tones it is desired to emphasize that it is difficult to advise regarding exposure; but when concentration upon the lighter portions is aimed for, an exposure just sufficient to penetrate the deepest shadows, followed by the application of a dilute developer, should give the quality wanted. With average landscape or architectural subjects, however, where massing of tones and moderate transition between gradations is needed to overcome "spottiness," a decidedly full exposure, even for the shadows, is advisable — then development in a solution of normal strength, but for less than the usual time. In all cases overdevelopment is to be guarded against, since dense blocked-up highlights destroy any sparkle, owing to the lighter tones merging into one and making it impossible to show gradation in the print.

After all precautions have been taken it sometimes happens that some light tones which could not be excluded in the first place appear in portions of the composition where they prove a distracting element, and in such instances the only remedy is either to reduce them locally on the negative or resort to touching up the finished prints. If the latter, powdered black lead (graphite) is a convenient medium for lowering light-spots on black-and-white prints, whereas soft pastel-crayon of the right color can be applied in a similar way to sepia-toned prints on matte or rough paper, in either case rubbing well into the texture of the paper.

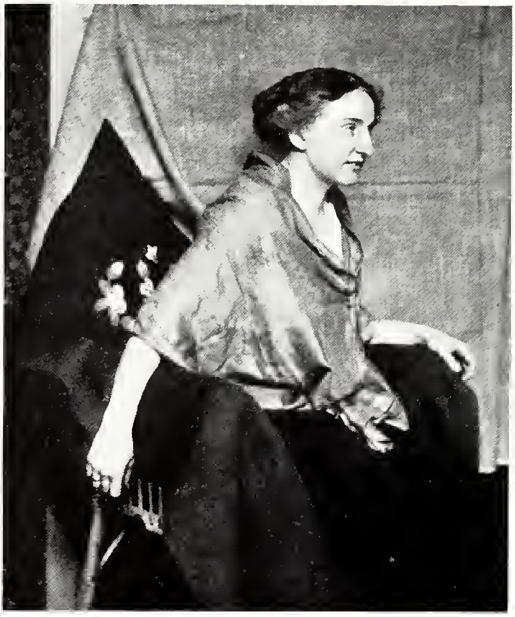
Although a black print is fully capable of suggesting the brightness and general feeling of sunshine in a properly handled composition, there is no doubt that some subjects are more effectively presented in a warm sepia, or other appropriate color, with cream-toned highlights, while in all cases a great deal can be done by careful mounting to bring out the principal tones.

Photography and Painting

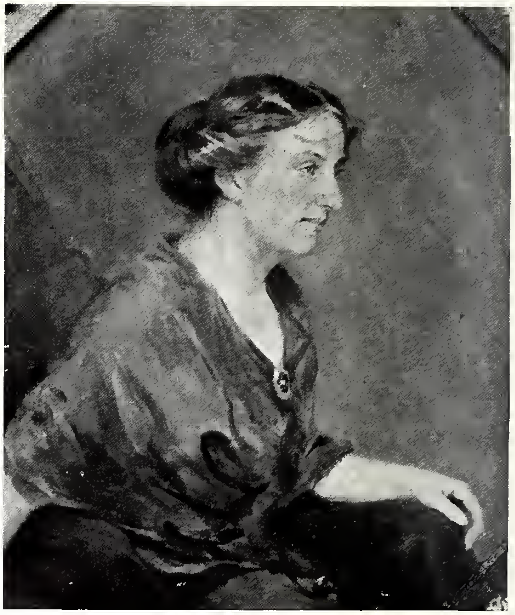
DR. W. WARSTAT

IN the early days after the discovery of photography it was prophesied that the new art would be nothing more than an aid to painting. At least that is what we may gather from the opinion expressed by the artist Paul Delaroche regarding photography when the question of giving a life-pension to its two discoverers, Niepce and Daguerre, was being discussed. "The painter," he said, "will in this process find an easy means to get a collection of sketches that he otherwise could obtain only by the expenditure of much time and pains, and then only in a far more imperfect way, however great his talent might be." It is also well known that that old master of artistic photography, D. O. Hill, who made his best pictures about 1843, had already employed photography as a technical auxiliary. At the present day the matter lies for the most part with the painters — that is, the portrait-painters — since they can use it as preliminary work and for convenience

"WHEN DANCING SUNBEAMS ON THE WATERS PLAY"
WINTER-SUNLIGHT
WILLIAM S. DAVIS



THE PHOTOGRAPH



THE PAINTING

in saving the model unpleasant and time-robbing sittings, and, for themselves, as an aid to the memory, and in forming a foundation on which to build and perfect their pictures.

It must be of no little interest to the artistic photographer to compare such auxiliary photographs with the painted picture. In this comparison it should be shown how far the painter's reproduction of nature differs from that of the photographer — how far he changes the photograph in order to carry out his artistic ideas. In this comparison we shall learn exactly the character of the painter-artist's work; and then we can consider how far this artistic aim may be attained by means of photography alone. This means, however, nothing more than that we are coming to the solution of the old question of the relation between artistic photography and painting. We can then — supported in a measure by visible and provable demonstration — ask such questions as the following: "Is artistic photography really an art?" "What is there artistic in it?" "Is it the 'pictorial,' or is it something special, peculiar, even photographic?"

I succeeded recently in obtaining from a well-known and gifted portrait-painter, Herr Joseph Tibor, of Hamburg-Ottensen, permission to reproduce one such study-photograph which had been used as a basis for sketching and later for painting the picture itself. In the photograph, therefore, we have the rough groundwork — that is, the unretouched technical photographic reproduction — whereas in the portrait we have the artistic execution, i.e., the sum-total of the painter's impressions as expressed by his talent, temperament and artistic views, in a rounded-out and finished whole that bears the stamp of individuality. Both are produced from the same model, and it is to be observed that, in the way in which the model is posed and the tones of the clothing, the flesh, the hair and the surroundings are brought together in relation to one another, a considerable artistic aid was afforded.

What such preliminary artistic work means, the artistic photographer will fully understand, because a subsequent correction of this work by photographic means is disproportionately more difficult than it is for the painter. It may, therefore, perhaps be said that in this preliminary work the photographer not only had to produce the same, but even more than the painter. While the painter may satisfy himself in arranging the pose of his model and bringing the colors and their tone-values into harmonious relation with one another — in short, determine once for all the constructive elements of his picture, considering the treatment of details as unnecessary — the photographer must really pay attention to all these details; he must observe the fall of the background, the direction of the lines, and the perspective relation of the various details to each other. He must not only consider their esthetic value, but he must know how the various esthetic values can best be reproduced, technically, by changing their positions or moving them around. This applies especially to the lighting and tone-values.

If a photographer who is accustomed to work with an eye to artistic effect will examine such a study-photograph, he will recognize at once the correctness of the foregoing remarks. Much that the painter would have passed unnoticed, saving himself for the development of the subject proper of his picture, the artistic photographer must attend to beforehand. He would, for example, so arrange the shoulder-shawl that the cast of the folds about the neck would be a little harder, and between the right arm and the breast somewhat more plastic. Further, he would choose his lighting and exposure so as to bring out the plasticity of the flesh and the figure, and so arrange that the flesh should have a warmer tone. He would probably also have arranged the surroundings with more individuality.

The painter has done all this afterwards in working out the painting. In doing so, he has changed a whole series of esthetic values, representing them differently from what they are in nature, and as they are in the photograph, even adding new ones. First, he has changed the impression of roominess. He has taken the figure out of the roomy, realistic surroundings and arranged it by itself in an ideal spacing of the picture which is located and limited by the figure itself and the outlines of the painting. Above the portrait he has represented the light and dark patches as a purely pictorial value, with light and shade separated and set off against each other.

The realistic significance of these surfaces, part of the chair, the cushion, the drapery in the background, have disappeared; only the figure and the shawl have retained their realistic importance as the principal objects. The sharp contrast between the dark dress and the shawl — in nature dull lilac-colored — is almost eliminated. The dress has become a shade lighter, the shawl darker. Moreover, in comparison with the photograph, which makes the flesh almost chalky, the flesh-tones are much warmer. In a word, the painting is executed in middle-tones, whereas in the photograph the highlights and deep shadings, the clear portions and the deep shadows, were very prominent.

Finally, the painter has depicted the expression of the face somewhat differently from that of the photograph. On comparison it can be clearly seen that the photograph reproduces a momentary stiffness of expression, whereas in the painting the expression is deepened, enlivened, concentrated. No wonder; for the expression of the face is really a summary — that is, a summing-up of the individual observations of the artist during hours and days in the presence of his model.

The question now is, whether the photographer with his technical aids can attain results similar to those reached by the painter. We have shown that the photographer, by intensive preliminary work on the model, can obtain a great deal before making his exposure, that the painter, in our example, had to execute while painting. He can in such preliminary work even arrange an ideal spacing of his picture, and treat the temporary accessories as simply as possible or omit them altogether. He can also bring out the plasticity of form by the arrangement of the background, etc.

Where the preliminary work on the model itself is not sufficient, much can be done afterwards in printing the positive. One can, for instance, by the aid of the so-called artistic positive processes, such as gum- and oil-printing, suppress details that are too strongly realistic in the negative. With these processes, especially, the tone-values can be altered at will.

It must here be again pointed out how important a good selection of the portion of the picture to be reproduced is for a correct space-impression.

Only in one particular is the work of the painter unattainable by the photographer: he cannot in his picture depict the sum of expression, the spiritual expression, that results from full observation. Here we find an important point of difference between photography and painting. But the photographer can make good this deficiency in other ways. He must, by carefully watching the changing momentary expressions, endeavor to catch one that will be especially "fruitful." Long training in this and in rapidity of action when exposing will enable him to attain this object. This schooling of the eye, this presence of mind in seizing the right moment, is therefore something that the photographer must possess in a higher degree than the painter, if he would solve the problem of expression in photography.

If we again glance over what has already been said, we can state without hesitation that up to this last point the photographer apparently can obtain by his own resources everything that the painter can. Among photographers to-day, however, this point is still contested. There are champions of the photographic as well as of the pictorial around every prize. Some declare that the photographer is trying to imitate the painter, and the result is something between a photograph and a painting — a spurious art, neither photography nor painting. (In the preceding analysis the lack of color, inherent in photography, is disregarded.) This means that everything that tends to make photography "pictorial" is effected by painters' methods; i.e., in the same way and by the same means as the painter obtains them.

In fact, the champions of the "pictorial" are right in so far as the photographer must closely observe certain artistic fundamentals, such as in regard to spacing, pose of the figure, representation of motion, etc., in which he must have recourse to exactly the same artistic knack and devices in the solution of this problem as the painter. The photographer can learn immensely from the painter regarding these points, because the painter possesses a much better technical and artistic education and far more practice in the use of these means. Hence, it is highly instructive for the photographer to compare a photograph with a painting of the same subject, as we have been doing. At the same time, we are not saying that the photographer is obliged, everywhere and in all circumstances, to follow the methods of the painter. Let us return to our examples. The painter has taken the figure out of its realistic environment and placed it by itself in an ideal one. The photographer does not need to do that at all. It seems to be more in line with photographic technique to leave the figure in its realistic spacing and with its realistic surroundings, merely simplifying and harmonizing these values so as to give the whole an artistic setting. The photographer reaches then a quite different effect from that of the painter in this case. And even if the photographer has recourse to personal "pictorial" effects in the widest sense, when making the positive, nevertheless the original realistic character of the photograph cannot be obliterated.

Advocates of the "pictorial" will now say that photography is not pure art, because the realistic foundations have always something mechanical and impersonal about them. But it is just behind these realistic fundamentals that the photographer hides a very considerable amount of artistic work, and in the arrangement of his subject must show notably more artistic skill than the painter needs to; that his attention must extend to the smallest details, and that he must weigh to the fullest extent the esthetic value or worthlessness of these details to himself and in the technical reproduction of the picture. And after all this will it still be said that the purely photographic reproduction of a subject so treated and prepared is merely a mechanical, dead, impersonal technical production? No! Even out of this purely photographic reproduction will speak the soul, the personality, of the artistic photographer.

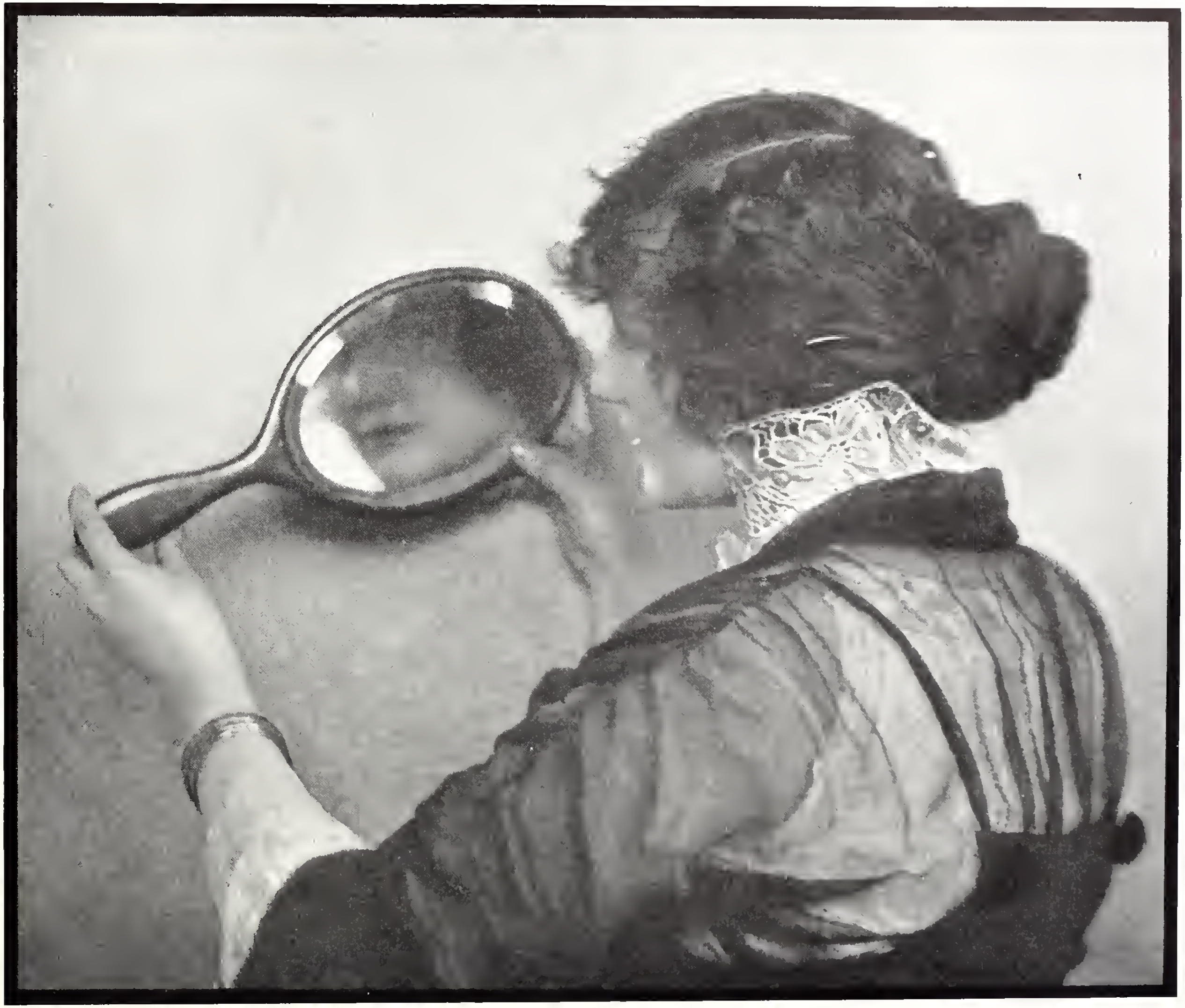
To be sure, in most cases these purely photographic reproductions will not be artistic photography. It will still be necessary to carry out and complete in the printing-process the artistic preparation already begun. In this — that is, in the gum- or oil-printing — the brush plays a more or less important part, and therefore the mode of working apparently approaches more or less closely that of the painter. But this outward approximation does not make artistic photography painting. If we should make that assertion, it would be doing a wrong to both artistic photography and to painting. But painting has infinitely more than photography can offer, and photography is, on the other hand, in many respects unsurpassable. Painters have often remarked to me in view of an artistic photograph: "We cannot do such things." But they can do others.

It is not right, therefore, because artistic photography, like every other art, must observe general artistic principles, and because in many technical points it approaches painting, to call it an imitator and an offshoot of painting. It is by reason of its characteristic and undeniably realistic technique something peculiar that is the more effective the more this peculiarity is prominent; it is simply "artistic photography." It can, of course, learn much from painting, and has done so in all its stages of development; but it must, should and can especially avoid following always and everywhere the methods of painting. It should, on the contrary, seek to solve certain problems in its own way with its own means. Photography has done so successfully, for instance, in the motion-picture line; and in this our present-day painting has again learned something from photography.

Photographische Rundschau.

For every art is a language, and to secure power
and beauty and adequacy of expression a man
must command all the secrets and resources
of the form of speech which he has chosen

HAMILTON WRIGHT MABIE



VANITY

WILLIAM SHEWELL ELLIS

Making Commercial Photography Pay

ROBERT F. SALADÉ

It is not essential for efficient photographers to wait for opportunity to knock upon their doors. With a little thought-sifting they can take their cameras and create their own opportunity. In addition to knowing how to do good work, all they need is a number of original ideas in order to get plenty of profitable business.

In a measure, the commercial photographer's situation is like that of a literary worker, or an artist-painter — he must plan and execute an out-of-the-ordinary product, and must then find a market for it. Let this work be beautiful as well as useful, however, and there will be no difficulty to sell it.

Recently, in Philadelphia, there took place a big Sunday-school parade. Thousands of children were in line, and each school was represented by different costumes, special floats, banners displaying the names of the churches, etc. On one of the main streets along which the pageant made its way is located an enterprising photographer. He had planned for the occasion, and, as each Sunday-school division passed, he photographed a carefully studied view of it. When the parade was over, he had some fifty different scenes, each one featuring the children of a separate school.

When the first assortment of prints was ready, the photographer placed a complete set on exhibition in his show-windows. Under each subject was a legend giving the name of the Sunday-school represented, and suspended over the display was a neatly lettered placard which stated that finished prints of each scene, beautifully mounted, could be bought in the shop for forty cents apiece.

Then, to the clergyman in charge of each church in question, the photographer mailed with his compliments a handsomely mounted photograph of the church's little folks on parade, and the clergymen's attention was directed to the fact that additional copies of the picture could be ordered at the rate mentioned in the photographer's windows.

Next morning one of the ministers telephoned and asked if the photographer would be willing to make up the prints in quantities to sell at lower rates. The clergyman wanted to buy forty-three copies and present one to each of the teachers and children represented. After some figuring, the camera-man found that he could offer reduced prices when more than a dozen of the views were ordered at a time, so the 'phone-call was answered in the affirmative. Later, acting upon this "tip," he mailed a short, well-written letter to every pastor whose Sunday-school classes had been photographed, stating that the special rate had been decided on, and that, by "pooling," the scholars could each buy a picture at a considerable saving.

During the following two weeks most of the churches responded by ordering complete sets of the photographs, and numerous orders were received in the store from individuals who desired copies to mail to out-of-town friends. Meanwhile, the attractive window-display had been the direct means to win a lot of new customers for other work. It should also be mentioned that the photographer sold a number of choice views of the parade to local newspapers and to four religious publications, while a number of merchants bought selected copies to exhibit in their show-windows.

A few weeks ago a great national convention of business-men was held in one of the big hotels of New York City. In certain rooms of this hotel were installed some of the newest labor-saving machinery, which the inventors and makers wished to demonstrate to the delegates and visitors to the convention. Pains had been taken to make these exhibitions very attractive. The decorations of the rooms were beautiful, the demonstrators of the machines were attired in special uniforms and the furnishings of the apartments had been carefully planned by expert professional decorators.

When a certain alert commercial photographer heard about this through a friend, he immediately hustled to the hotel and offered his services to the committee in charge of the convention. He was informed that the hotel-photographer had already taken a number of good views of the conventionites in groups, but nobody had thought to have pictures taken of the mechanical exhibits. So, after obtaining permission, the "free-lance" photographer took several "human-interest" studies of the machinery-displays and their elegant surroundings. After the finished prints had been neatly mounted, copies were offered for sale to the manufacturers of the devices in question. Enough were purchased to make the venture successful. Then, the photographer sold copies of the best illustrations to several technical magazines which were covering the convention. Later, some of the delegates bought a few prints to use for publicity-purposes for the next convention.

Although this photographer has built up a substantial, steady trade through giving excellent service and the finest class of work, he never waits for customers to visit his studio when business slackens occasionally. He goes out and *creates* business. Not long ago, when things were a trifle slow, he took an unusual night-view of the great bridges over the East River; and because it was so far above the average night-scene of this character, he easily disposed of it to a well-known magazine-publisher for a snug sum commensurate with his effort.

When a new church, office-building, institution and so forth is completed — in the larger cities there is always some new structure being dedicated — our friend gets to work with his camera and takes the kind of photographs that readily sell in many directions. Take an office-building, for example; most of the business-firms located therein can at some period make good use of a picture of their home for publicity-purposes. But some business-men would never think of photography in this connection unless they were shown the finished copy, and that is what the photographer does — he shows something that can be made very useful to the purchaser. "Use a reproduction of this on your letterheads, on your business-cards, and incorporate a good-size halftone of it in your advertising-matter," suggests the lively camera-artist. He offers something that will aid a man's business, so he sells the photographs easily. Of course, there are other markets for the sale of such pictures — the technical journals and advertising-agencies, for instance.

When there is nothing else to do, this photographer studies and takes unique views of public buildings, parks, street-scenes, etc.; and in addition to deriving a lot of enjoyment out of such work, he also sells it at a handsome profit without difficulty. But these pictures are not of the ordinary flat variety. They are the work of an artist. They are beautiful and useful. Recently, he took a unique night-view of Park Row, New York, for example, and a well-known firm in the Tribune Building bought the picture for use in connection with its publicity-matter. This photographer has taken and sold many original illustrations of this character to publishers of magazines and house-organs. In a number of cases he has received as high as $50 for a special print, the buyers in this connection securing all rights to the plates.

Not long ago this commercial artist photographed an unusually interesting view of the New York Public Library. The splendid architecture of that famous structure was revealed in highlights and deep shadows. It was a masterpiece of photographic art. The finished prints ready, the question arose as to where to sell them to the best advantage, for our friend is in business for financial profit as well as for pleasure.

Now in great institutions like the New York Public Library there are many articles in addition to literary works. For instance, there are various mechanical devices used to aid in the detail-work of the library; business-equipment; lighting- and heating-apparatus; office-furniture, etc. So, after giving a number of these things close inspection, the photographer called on a certain manufacturer from whom the library had bought a well-known labor-saving device.

"It 's the most beautiful picture of the Library I 've ever seen," admitted the manufacturer, with admiration. "But what special use could I make of it?"

"Have halftone-plates made of it for your advertising-literature," suggested the camera-expert, "and mention the fact that your machines are installed in this grand institution. Think how highly this would speak of your machines."

"That 's a valuable suggestion," conceded the manufacturer; and he paid a substantial price for the exclusive right to the subject.

Through giving the finest work and perfect service this photographer has earned a good reputation among the class of business-men who are especially interested in artistic commercial photography. His customers are among the largest advertisers in the United States. Frequently he is ordered by certain concerns to go many miles away to make special photographs for advertising-purposes. It is not a question of economy, but of quality. The advertisers want extraordinary illustrations that will picture the subjects to the greatest advantage. They want effective *ideas* in photography, and our friend gets their orders because he mixes a lot of brains with his work.

There is an unlimited field for the commercial photographer who, in addition to producing work of the highest order, can create clever ideas. Business-men are willing to pay a photographer generously for thinking out original selling-suggestions for them. Again, for example, in the show-windows of leading hatters one often sees attractive illustrations demonstrating how the newest headgear looks on Mr. Average Man. One enterprising artist took a number of such views, incorporating an added attraction. The smiling face of a pretty girl was shown in the background of the pictures. Live hatters bought copies of the prints without any argument from the photographer being essential. That girl's face increased the advertising-value of the illustrations many fold.

Another photographer is specializing in original subjects for magazine-covers. Not exclusively portraits of pretty girls, but illustrations suggestive of the various months and seasons of the year; scenes of industrial and social activity; interior pictures of the home; unusual illustrations of mountains, woodlands, seashore and towns. With the aid of scissors, paste and India ink, this artist often creates original cover-designs that would test the skill of an art-painter. Thus there is a market somewhere for every good photograph that can be applied to commercial use. Thousands of subjects are used yearly in connection with advertising-matter; the technical journals, newspapers and standard magazines are constantly in need of unusual views suitable for their various purposes. Other fields are open for original subjects for postcards, calendars, window-display cards, etc.

A good idea will sell itself.

IN OLD CAPISTRANO H. P. WEBB

Dealing with Cracked Negatives

A. SCHAMASCH

THE question of repairing a negative that one has had the misfortune to crack has frequently filled the columns of photographic journals. Most methods described involve stripping the film from the cracked support and mounting it on a new one. Such a method involves considerable risk, for apart from the difficulty of getting the film to leave the original support without damage, it is very tender, and great care is required in mounting it. Moreover, if the film is broken into more than two pieces, this method is quite impossible; and if in two pieces, very nearly so, owing to the difficulty of registering two flimsy gelatine films without distortion.

Thus many photographers prefer not to risk the films, but make the best of it by laying the pieces together on a glass and binding them somehow.

The method I am about to describe, however, involves no risk to the film, and has given extremely good results.

We will deal with two cases:

(1) That in which the glass only is cracked, the film being unbroken.

(2) That in which the film and glass are broken into two or more pieces, but where the film is still adhering to the glass at the edges.

In the first case perfect results are obtainable, in so far as the plates repaired have been submitted to several people who could not locate the crack, which extended right across the plates.

The method is by the use of a solution of Canada balsam in xylol. Such a solution can be put up by a good chemist for a few pence. It should be of the consistency of salad oil or very thin treacle.

The method of procedure is as follows:

Lay the negative, film downwards, on a piece of paper, and with a match dipped in the solution go over the crack, leaving a train of the solution over it. In a few seconds the solution will probably be seen to have worked its way into the crack, which will have become almost invisible when examined by transmitted light. A slight bending-effort, so as to open and close the crack imperceptibly, will help matters, but great care must be taken not to damage the film. Heating the negative is said to make the solution run easier, but I have found no difficulty whatever with glass and solution cold.

After lying flat for a few minutes, the plate must be put aside to set hard. It is well to support the plate during this period in such a manner as to tend to close the crack, and so drive out surplus balsam. It may be supported at the two edges that are nearest parallel to the crack. The secret of success is to let it set hard; three days to one week should be enough, the length depending on the depth of the train of balsam left on the glass side. After this time the negative is placed, film down, on tissue-paper on a flat surface, and the surplus balsam scraped off with a knife. If after scraping off the top portion the lower part is found not hard, it should be left longer for this lower layer to set. If much balsam has been spilt over the plate it may be removed rapidly with a rag soaked in benzine or petrol, but such solvents should not be used near the crack, as it will tend to dissolve out some of the balsam. If properly done, the crack should be invisible without the closest scrutiny and the knowledge of where it was. It certainly shows no trace by any printing-process.

It is safer now to bind a piece of plain glass on the glass side so as to strengthen it mechanically.

In the second case the results obtainable, though not quite so satisfactory as those in the first, are superior to those obtainable by any method which involves stripping the film.

The two or more pieces are assumed to fit well, otherwise the plate is beyond repair by any process. A piece of glass of same size as the negative is taken and a pool of the balsam solution poured on. The pieces are slid into position, film side up, onto the glass, taking care to exclude air-bubbles. They are then pressed into contact and register. The balsam will find its way up the joints and probably ooze through to the film side of the crack. The pieces should be clipped in position with strong paper- or letter-clips, and allowed to set. As the solution is between two close-fitting glass surfaces, this takes considerable time, but one to two weeks will probably be found sufficient. When set, the balsam *must be removed from the film side.* In this case it cannot all be scraped off with a knife, but as much as possible should be removed by this method, without endangering the film. For the rest the benzine-soaked rag must be used. The less time allowed for the benzine to work its way into the crack the better will be the result. Of course, the crack will show where the film joins, but there will be no visible crack in the glass. A little retouching on the negative, and a very passable enlargement may be made, which

AFRICAN DAISIES H. R. DECKER

may be retouched and copied. In many cases even a contact-print will be quite passable.

In the last case I did by this method I was astonished to find that, after all the balsam had been removed from the film near the crack, the film there had a faint yellow stain, probably drawn from the balsam. I eventually removed this by treating the negative with alternate baths of weak bleaching-lime and weak nitric acid. Perhaps some reader will find a simpler method.

In conclusion, I may say that though I have explained the procedure in detail, it is in reality far easier than it sounds. The only disadvantage is that the Canada balsam solution is very sticky after a few moments' exposure to air, and has a nasty habit of getting where not wanted. Particularly in the second method, where the stuff oozes out between the plates for a considerable period, it is rather difficult to keep the fingers clear of it, and if they get sticky it is not easy to adjust the pieces of negative in register.

The Amateur Photographer.

ALL art is "decorative," even in its applied forms, and, while it is not only proper but also necessary to make studies, these should not be exhibited, the person who entitles an exhibition-picture "Study" simply advertising his own affectation or his paucity of imagination. Many prints and paintings are shown which have no reason to exist except that they are pleasing arrangements of line and tone, though some of them are undeniably beautiful, and for that reason are valuable additions to our store of desirable pictures.— PAUL LEWIS ANDERSON, in *Pictorial Landscape-Photography.*

A WINDY DAY H. L. BRADLEY

Platinum Water-Developed

GUY SPENCER

PLATINUM is conceded by the cultivated to be the paper *par excellence* for pictorial effects. The beauty and richness obtainable, their absolute permanency, the ease of manipulation, the variety of modifications possible in development, make it the paper best adapted to the needs of those who desire prints of a distinguished character.

An impression prevails that platinum requires special kinds of negatives to secure the best results. One authority writes that any good negative that gives a desirable print by other methods will afford a still better one on platinum, but he qualifies this statement, however, by saying, "Platinum printing is not favorable to poor and indifferent negatives." If by poor and indifferent is meant thin and flat, platinum may produce prints anæmic and weak, but by a little "humoring," which takes the form of clear water for the developer, these same negatives will give place to prints of soft tones and pleasing gradations.

Water-development has possibilities which every worker in platinum who has not tried it will find absorbingly interesting, and highly satisfactory in results. The process is suited to very thin, flat negatives, that with the regular potassium oxalate yield prints of undesirable flatness, dull and tame.

Through the "Imp of Mischance" it often happens that a particularly clever pose, a portrait impossible to duplicate or something specially desired of the best comes out deficient in printing-quality. When this happens try water for the developing-agent, then make another print, using oxalate, and note the difference. Place the two together for comparison: that developed with oxalate is heavy with a leaden sameness; the one developed with water gratifies by reason of soft gradations. And, too, the operation is decidedly simpler than the various modifications recommended for negatives that are not up to the standard.

The only requisites are a thin, flat, portrait-negative, some platinum paper of the so-called black variety (the sepias proving less satisfactory), clear water, room-warm, and the bath of hydrochloric acid. It is always difficult to give any very definite instructions regarding the depth of printing. Each worker has his own particular mode of judging when the action of light has gone far enough. Speaking generally, print deep. When the image fades out and then returns is about the time to remove it from the frame. However, a few experiments will determine. A slightly reddish hue visible through the clearer portions of the negative seems to indicate over-printing.

When ready for the developer, the paper is immersed in the clear water after your own pet fashion and allowed to remain until your individual taste is suited. Development is somewhat slow, and up to a point the print will continue to darken. It is then cleared in the acid bath, washed and dried as usual.

The American Journal of Photography.

MT. UTSAYANTHA, STAMFORD, N. Y. WILLIAM LUDLUM, JR.

Darkroom-Lights Up to Date

E. J. WALL, F.R.P.S.

IN considering the question of darkroom-lights one must take into consideration the sensitive surfaces to be used, and we can divide them into three main classes: (a) positive processes, (b) ordinary and orthochromatic plates and (c) panchromatic plates.

To prepare filters with accurate absorptions it is necessary to coat a given quantity of dye on a given area of glass, but as an alternative it is possible to remove the image from waste negatives with Farmer's reducer or potassium cyanide, and stain by immersion in a dye-solution. It should be pointed out, however, that this method entails the use of a considerable quantity of dye-solution, and with the present shortage and high prices it is not an economical method. It also really calls for the use of a spectrograph. In the following formulæ alternative dyes are suggested, so that if one dye cannot be obtained probably one of the others can be.

The size of the glass is merely a matter of personal opinion. At Syracuse University we use 8 x 10, fitted on three sides of a wooden box, with a 25-watt Mazda lamp. These boxes are placed three feet above the sinks and give ample light. Our darkrooms, at least two of them, measure 9 x 17 feet, with 14-foot sinks, and two lanterns are spaced on the one side and one in the center on the other. But it would be as well to add that so nervous are some students that at first they work with only one lantern. The light is so brilliant as to appear unsafe, but it actually is a very safe light. I do not believe in working in chimerean darkness, and it is perfectly immaterial how much light you have — in reason — as long as it is really safe. For panchromatic plates the darkroom measures 17 x 18 feet, and the sinks are L shape, and we use only two lanterns, one on each sink, and they are 20 feet apart.

It would be as well to explain that the first thing I teach a student is that he cannot by any chance put into a plate anything that is not there nor take out of a plate anything that is there. We develop entirely by time, using a developer of constant composition and constant temperature, and we determine the time that will give us a given degree of contrast with every plate and developer that we use. If we want to try a new plate or developer, this is the first thing to be done, and we rely on our factors thus found absolutely.

No one can improve a negative by holding it up to the darkroom-light every few seconds to see how it is getting on. What is and what is not in the negative is determined once for all by the exposure. The printing-qualities of the negative can be determined, with a given positive emulsion, by the duration of development, and if the necessary factors are determined there is not the slightest need to look at a negative at all during development.

These preliminary remarks, which may seem absolutely beyond the question, are made to prove that the darkroom-illumination is dependent to some extent on the person that works in it. When a man wants to haul a poor film or plate out of the developer every minute, and examine it within a foot or two of the light for half a minute, there is practically no light that can be safe, for the sensitive salts of silver, even when wetted with the developer, are, if exposed long enough, sensitive to the whole of the spectrum, and thus fog must be caused.

Dealing with the first class of sensitive surfaces, we know that gaslight papers can be manipulated in weak white light; but it is a dangerous game — for amateurs — and a bright yellow light is equally convenient, quite as pleasant and very much safer. But assuming that we want to work the more sensitive bromide papers and lantern-plates in the same room, then an orange light is preferable.

In the following formulæ the quantities are calculated for 8 x 10 glasses, and in all cases an eight-percent solution of gelatine should be used:

A

Gelatine solution	65 ccs.
Tartrazine	0.6 grams
or Brilliant yellow	0.25 grams
or Naphthol yellow	0.5 grams
or Brilliant orange	0.5 grams
or Auramin O	0.5 grams

B

Gelatine solution	65 ccs.
Yellowish eosin	1.0 gram
or Rose bengal	0.25 grams
or Xylene red	0.125 grams
or Fast red D	0.125 grams

For fast ordinary and orthochromatic plates of all kinds, which may be used in the same darkroom, the following may be used:

A

Gelatine solution	65 ccs.
Fast red D	0.25 grams
or Rose bengal	0.25 grams
or Rhodamine	0.25 grams
or Xylene red	0.25 grams
Tartrazine	0.25 grams

B

Crystal violet solution	18—36 ccs.
Gelatine solution, 12-percent to	65 ccs.

Instead of the crystal violet, methyl or ethyl violet may be used — in fact, crystal violet is only a pure methyl violet. These dyes are sensitive to light, and therefore a stock-solution should be made as follows:

Dye	1.0 gram
Cupric sulphate	5.0 grams
Glacial acetic acid	10 drops
Water to	100 ccs.

and this used in the quantities given. If the smaller quantity be used then the light is so bright that great care must be exercised or it will assuredly fog an orthochromatic plate. Personally I prefer the full quantity of 36 ccs. Or one may use:

Gelatine, 12-percent solution	30 ccs.
Tartrazine	0.5 grams
Crystal violet solution, as above	36 ccs.

Or A

New coccin	0.25 grams
Gelatine solution	65 ccs.

Or B

Hoffman's violet	0.06 grams
Gelatine solution	65 ccs.

Both of these give plenty of light and are quite safe. The following is a very dark, deep red, which is no safer than the others, though it looks so.

A

New coccin	0.25 grams
Naphthol green	0.05 grams
Gelatine solution	65 ccs.

B

Hoffman's violet	0.0625 grams
Gelatine solution	65 ccs.

For panchromatic plates, which include all screen-plates such as the Autochrome or Paget plates, a deep green filter must be used:

Naphthol green	0.5 grams
Patent blue	0.12 grams
Gelatine solution	65 ccs.

or preferable even is the following:

A FENWAY VISTA E. H. WASHBURN

A

Brilliant orange	1 gram
Gelatine solution	65 ccs.

B

Naphthol green	1 gram
Gelatine solution	65 ccs.

In order to make the filters, photographic gelatine need not be used. Any soft household gelatine will do provided that it is well washed first by stirring it in water and pouring off the water, and repeating the operation three times. It is as well to make up a good stock of the plain gelatine solution, and if the gelatine be washed then it should be melted in the water that it has absorbed, and the bulk made up to the required quantity with water. The solution should be filtered through well-washed Canton-flannel. Where the quantities of the dyes are very small it is advisable to make up stock-solutions, and in most cases a 1-percent solution can be made.

A leveling-stand will be required, but this can be made easily with a sheet of plate glass and three leveling-screws, or even three wedges of wood.

The temperature of the gelatine-solution should be not less than 130° F., and the graduate used to measure out the dyed gelatine should also be placed in hot water. The addition of the dye-solution will not lower the temperature enough to cause trouble. When the quantity of the dye is large enough to be weighed out in the dry state then great care must be taken to see that it is all dissolved before coating. My practice is to make up the dyed gelatine-solution in a 250 cc. bottle, gently shake the bottle around and around, and then place it in hot water and leave it there all night for the bubbles to subside, melting it up the next day for coating. The use of the dyes in solution prevents this trouble, which is not of much moment, as on pouring the dyed gelatine out into a graduate any bubbles can be broken at once with a spill of blotting-paper. I keep a small pile of little spills of blotting-paper by the side of the leveling-stand, as they are very handy in breaking any bubbles that may form in pouring.

Having measured out the dyed gelatine the lip of the graduate should be brought quite close to the surface of the glass plate in the center of one end of the glass; then start pouring, and run the graduate to the other end of the glass. One thus obtains a long pool, which can be spread out to the edges of the glass easily with the tip of the first finger. I prefer to use this, although it dyes the finger, as it will not chill the gelatine as will a glass rod. It will be found easier, too, to coat the glass if it be placed on top of a radiator for some time so as to get warm. It requires some little practice, of course, to be able to coax the gelatine out to the edge of the glass without letting it run over, but one soon gets the knack.

The glass must remain untouched till the gelatine has thoroughly set, and can then be reared up to dry. There are one or two points which should be observed. Hard gelatine should not be used or the film is apt to split and subsequently peel under the heat of the lantern. This can be prevented by adding a little corn syrup or glycerine to the dyed gelatine, about 1 percent; but it is preferable to avoid this if possible, as with some dyes these act as sensitizers and the dyes fade. The glasses must be clean.

In some of the above formulæ it will be noted that two solutions are given, A and B; this means that they must be coated on separate glasses, as the dyes are not miscible, and will precipitate one another. The two glasses must be bound together.

In all cases it is advisable to place in between the two filters a sheet of thin paper. With all the formulæ a piece of tissue or thin onion-skin typewriting-paper is sufficient. The above formulæ are calculated for 16-candle-power carbon-filament lamps, but if Mazdas are used, or if the lights seem too bright, it can easily be reduced by using the thinnest possible blotting-paper and soaking in a solution of a dye, which may for the yellow and green filters be eosin, rhodamine or rose bengal, and for the red filters methyl violet. But the dye-solution must be weak or else they will reduce the light too much. Only two sides of the filters should be bound up, leaving the top and bottom open for the escape of any moisture.

Naturally one may soak thin blotting-paper in dye-solutions and when dry bind up between plain glasses, but I have never worked out such formulæ, and the only one that I know, and have never tried, was given some years ago by Namias:

Tartrazine	10 grams
Rhodamine	1 gram
Water	500 ccs.
Alcohol	500 ccs.

Increase of the rhodamine will give a deeper red, and staining a paper with methyl violet and binding with the above will give a very deep red. For green paper screens the same dyes may be used as recommended above for the gelatine filters, and it should be possible to dissolve the given quantities in a little alcohol and water, and paint on the paper. Naturally, if one has a spectroscope, or rather a spectrograph, it would

BASEBALL IS IN SEASON HORACE W. LEEDS

be easy to test out the dyed papers. Visual examination with a spectroscope may be misleading, as a filter may pass the extreme violet, to which the eye is so little sensitive that it would not be noticed, and yet this would be almost certain to fog the plate.

As regards the drying of the filters I will give a tip that may be useful to many. For drying all negatives or filters we use one of the small electric fans, such as may be seen in many a barber's shop or bootblack parlor. They are not expensive, can be attached to any lighting-socket and by the turn of a switch either hot or cold air may be obtained. We can dry an 8 x 10 negative taken from the washing-tank, without wiping off the superfluous water, with one of these fans in half an hour, using cold air only; but if the film is wiped with a dry cloth, and cold air turned on at first for ten minutes, and then the blower placed three feet from the negative and the hot air turned on, the plate will dry in twenty minutes. At this distance the temperature of the air is 90° F.

It will be noted that I have given no formulæ for daylight for the simple reason that I do not know them, and I do not believe in using daylight as the illuminant for the darkroom. But assuming that the sun never shines onto the window, then, roughly, one-third more of the dyes must be used.

Those who have had the privilege of visiting the Research Laboratory at Kodak Park will have been struck by the indirect illumination employed. One cannot see the lights at all; they are enclosed in boxes opaque underneath, and the light is thrown onto a white ceiling, so that

PARIAN GATE, WALLED CITY, MANILA R. W. SQUIRES

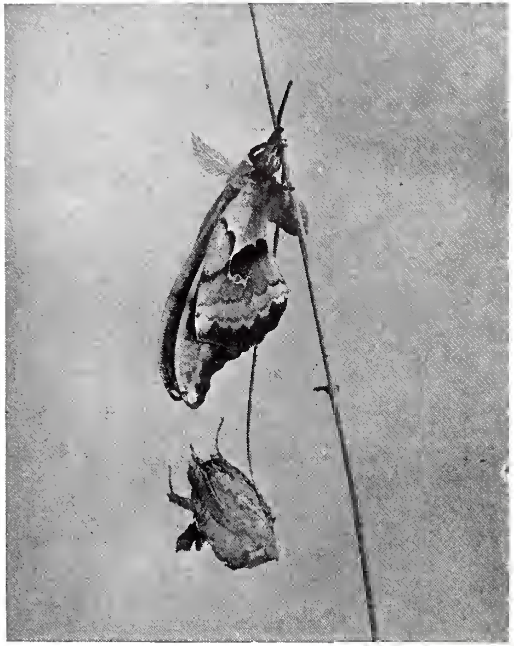
a very pleasant soft illumination is obtained. Dr. Mees has recently stated (*British Journal of Photography*, October 22, 1915, page 693) that he has found that a 25-watt lamp covered by a Series 1 Wratten safe-light, 10 x 12 inches, hung about three feet from the ceiling, will give ample light for every 100 square feet of floor-space. For bromide papers a Series 0 safe-light, and for gaslight papers a Series 00, and for panchromatic plates a Series 3, will give as much light as can be used.

The use of reflected light is convenient, and may be adopted with any of the above formulæ. This raises the point as to the color of the darkroom-walls. Many writers have recommended black or other dark colors, but this is absurd. If the light is of the right color in the first place — that is to say, if it is safe — then white should be the only color employed, for this naturally gives the maximum illumination.

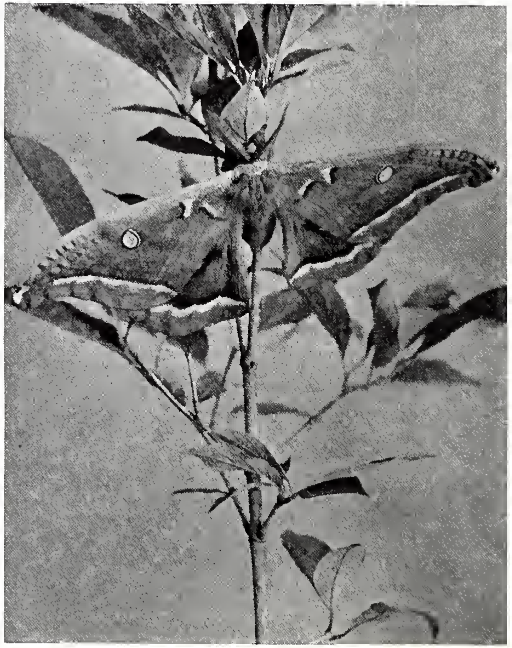
It has been suggested that separate red and green lights might be used and thus a brilliant whitish light obtained, and a patent has actually been taken out for this recently. The same idea was promulgated many years ago when a solution of nickel and cobalt salts was suggested. But this is all foolishness, for no admixture of lights that will give any semblance of white can possibly be safe.

The whole question of darkroom illumination ought to be on a scientific basis, and we ought to have a standard of safety, of brilliancy and accurate formulæ. Some years back, in England, Drs. Mees and Baker read a paper on the subject; von Hübl has defined brilliancy in units of distance at which a certain size of type can be read, a plan which was first suggested by Houdaille about 1892. My test is my watch-face; if I cannot read this at the normal distance, which is that when I pull it out of my pocket, about fifteen inches, I consider the illumination poor. As to safety, my test is to expose a plate at a distance of three feet, one-half being covered with black paper, for thirty seconds to the light. If fog shows on the uncovered half then I do not consider the light safe. It will be noted that the plate is exposed dry, and it is then much more sensitive than when covered with the developer.

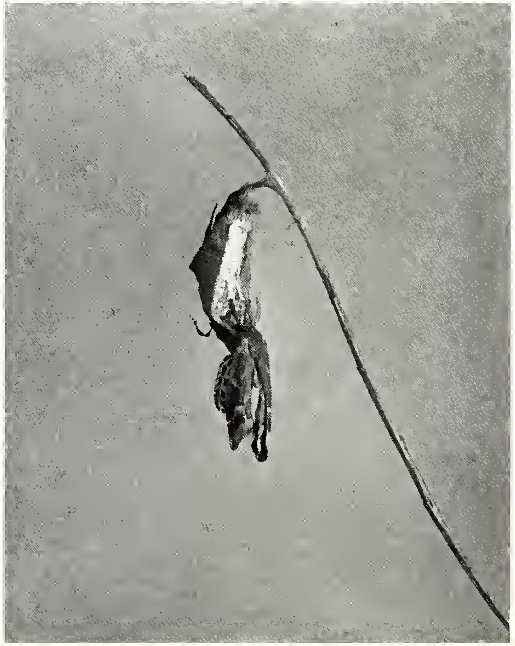
Let me add one precaution: make the lantern-body of sufficient size and so ventilated that the glasses will not get unduly hot. Many dyes are sensitive to heat, and it is possible so to heat up a gelatine filter that the film will split to pieces in less than three months. We have used our lanterns in the school at Syracuse University for two years, and they are as good as the day they were made, and the lights are burning at least six hours a day for eight months in the year.



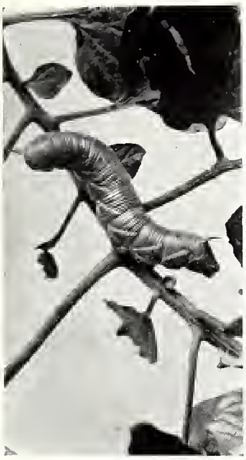
MALE POLYPHEMUS NEARLY DRY



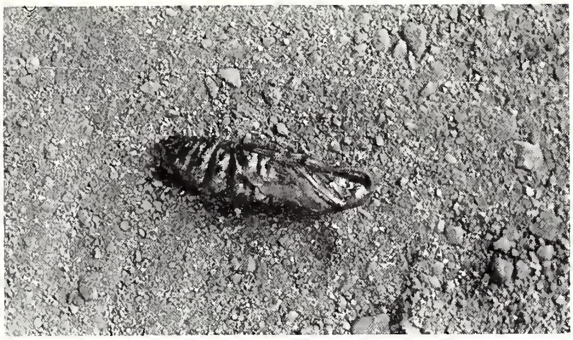
MALE POLYPHEMUS WITH WINGS SPREAD



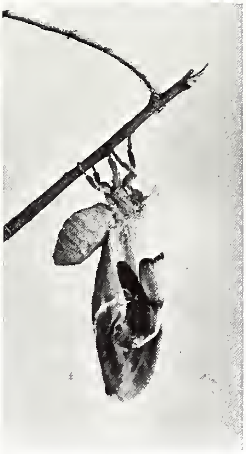
FEMALE PROMETHEA JUST OUT



CELEUS CATERPILLAR



PUPA-CASE OF CELEUS MOTH



FEMALE POLYPHEMUS

Photographing Moths

EDWIN A. ROBERTS

A VERY interesting branch of nature-photography, and one that does not require unlimited time and patience, is that of making a series of pictures showing the life-history of the beautiful, large night-moths that make their appearance in the months of May and June, also their caterpillars and cocoons. I hunt for caterpillars in the summer, and for the cocoons, that are fastened to the branches of trees and shrubs, in the fall and winter, as they are more readily seen after the leaves have fallen. Some caterpillars, however, burrow into the earth, hollow out a cell and change to a pupa there. I have found these pupa-cases in newly-plowed fields and gardens. The cocoons of the spinners, and the pupa-cases, of the earth, I keep in as nearly natural conditions as possible through the winter. About the first of May I place them where I can watch them as I go about my work. Then, as they emerge, a Cecropia to-day, a pair of Promethea to-morrow — or perhaps it will be a Polyphemus — the wondrous beauty of nature grows on me, and my spare time is delightfully occupied.

In my work, I use a south window, as it is the only one available; and as the studies are made before the sunlight strikes the table, on which the specimens are arranged, no diffusing-screen is required. I place the table three feet from the window and one foot back from the farther side. If the subjects will remain still for the necessary exposure I screen the lower part of the window, otherwise the full sidelight is used. Different shades of gray mounting-papers are used for the background; they also make excellent reflectors. I use a small hand-vise set in a large-mouthed bottle to hold the branch that the subject is to be photographed on. This vise is very useful, as the branch can be held in any position desired.

The camera used is a Seneca No. 9 fitted with a convertible rapid rectilinear lens of 8-inch focus, and has a bellows-extension of 22 inches, which permits working close to the subject. Isochromatic and panchromatic plates give a very good rendering in monochrome of the beautiful markings and colors of the moths. A light-filter is not used because of the necessarily long exposure. Recently I made instantaneous exposures with the Agfa flashlamp, the resulting negatives being very pleasing.

The Celeus caterpillar, known as the tomato-worm, was taken at 9 A.M.; stop, F/16; 40 seconds; Standard Orthonon plate.

Pupa-case of Celeus moth, same as above.

Female Polyphemus, shortly after leaving cocoon; 2 P.M.; dull light; stop, F/11; 60 seconds; same plate.

Male Polyphemus, wings nearly dry; 4 P.M.; stop, F/22; 60 seconds; same plate.

Male Polyphemus, wings spread; 9 A.M.; stop, F/22; 45 seconds; same plate.

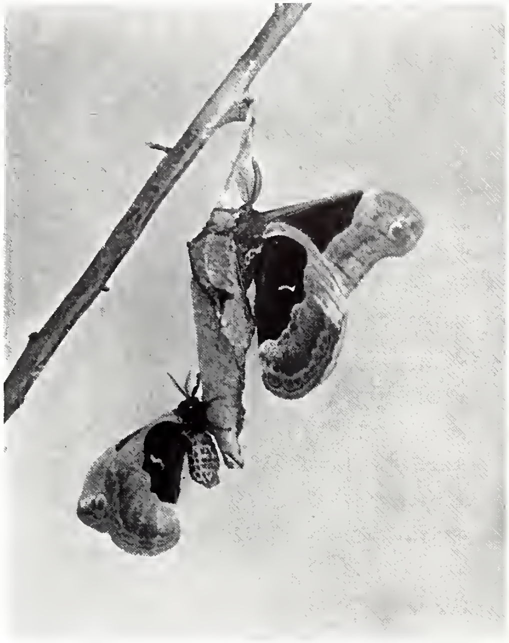
Female Promethea, just out; 7.30 A.M.; stop, F/16; 30 seconds; same plate.

Pair of Promethea; 10 A.M.; dull light; stop, F/16; 50 seconds; same plate.

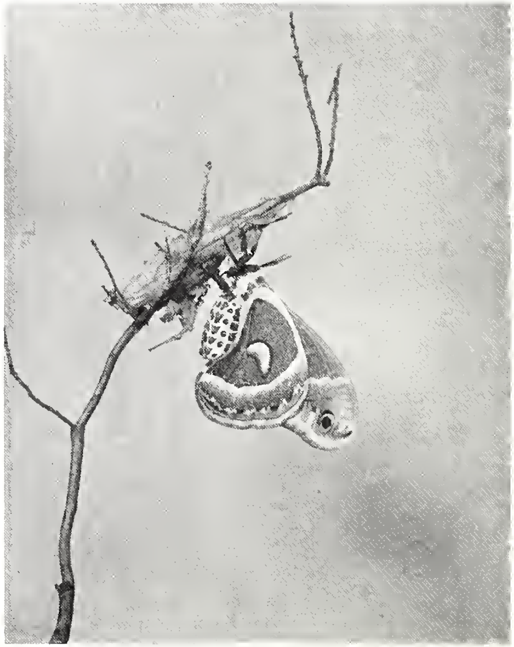
Female Cecropia, clinging to cocoon; 8 A.M.; stop, F/16; instantaneous flash, with 15 grains of powder; Wratten Panchromatic plate.

Cecropia, with wings spread, same as above.

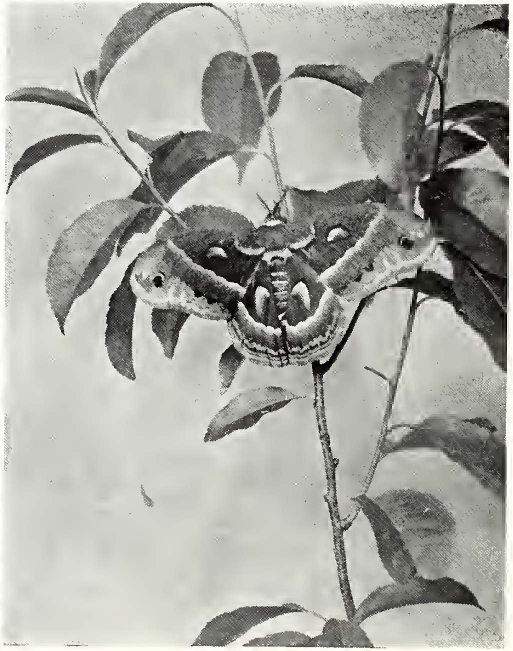
It is advisable to consult a book on moths as an aid in identifying them. "Moths of the Limberlost," by Gene Stratton Porter, and "The Moth-Book," by Holland, are excellent.



A PAIR OF PROMETHEA



FEMALE CECROPIA CLINGING TO COCOON



CECROPIA WITH WINGS SPREAD

EDITORIAL

Faked War-Photographs

THE production of faked war-pictures and their almost indiscriminate publication in newspapers and periodicals goes merrily on. Thus we have an alleged photograph, made at close range, of an observation-party high up in the lofty spire of some cathedral or municipal building, in one of the belligerent countries, and being used to justify the destruction of the edifice. The fact that an enemy photographer could not have made such a picture appears to be of little consequence; but the faker may console himself with the thought that no one will question the authenticity of the picture; or, if asked for an explanation, he will simply mention the expediency of the telephoto-lens. Yes; one need only to look on the ground-glass of the outfit and see what can be got at a distance of, let us say, five miles.

Then there is a snapshot of a squad of Turkish infantry drilling on the plains of Mesopotamia, recently published in an American periodical. There is nothing characteristic about the landscape; in fact, the topography is extremely indefinite. If one had been near when the exposure was made, he might have seen that the scene was laid somewhere in Uncle Sam's territory.

Or, let us take the photograph of the trial by court-martial of a French spy, so vividly portrayed by the camera. To be sure, the officers sitting around the table wear the German uniform; the sentry with gun and Pickelhaube stands at the left, and near him the informer; while at the right, in the foreground and facing his judges, stands the prisoner. But the large group is arranged so carefully, with an eye to the artistic and dramatic effect, as to arouse suspicion. Certain other inconsistencies in the picture suggest that the scene was staged and that it is not a real incident in the great struggle.

In this class of photographs should be included unusual military scenes, such as engineers, fully equipped, scaling a steep mountain-side; or cavalrymen forcing their stumbling horses down an abrupt declivity. Here the original obliquity of the precipice has been changed to appear almost perpendicular — due to the manner of making the photographic print — resulting in pictured feats that are hair-raising, but physically impossible. There is no doubt that a large percent of so-called war-photographs are clever counterfeits produced in this country. They easily deceive the uninitiated and satisfy the general desire for novel and thrilling episodes of the world's greatest war.

Parcel-Post for Photographs

IN the March issue we were induced to state that photographs could not be sent by parcel-post. This is not strictly true. The Department has ruled that when an unsealed package of photographic prints weighs more than four pounds it may be transmitted at the parcel-post zone-rates of postage. When such a package weighs four pounds or less, then it is subject to postage at the rate of one cent for each two ounces or fraction thereof, regardless of distance, within the limits of the United States and territories.

Naturally, if a package weighs less than the amount fixed by the Department for parcel-post, it can easily be made heavier by the addition of pieces of board, or any other convenient material to serve as ballast, so that the package, ready for mailing, shall weigh over four pounds — the minimum rate of postage being for five pounds. For instance: it costs sixty cents to send an unsealed package of photographs weighing five pounds to any point in the eighth zone. Hence, if a package of photographs weighing, let us say, forty ounces is to be sent from Boston to Denver by third-class mail, and costs twenty cents, it would be folly to increase its weight by adding worthless ballast merely for the sake of using parcel-post, which would cost fifty-one cents plus the expense of the ballast, making a total cost of about sixty cents — three times the cost of third-class mail! But the postage on this ballasted package would be only nine cents if the point of destination were within the first or second zone, as from Boston to Worcester or to Albany, for instance; and yet but seven cents if within the local postal district.

Therefore, parcel-post is a cheap means of transportation for short distances — the first three or four zones — third-class mail being used for more distant points. Even if not used as ballast, a couple of strong boards affords first-rate protection against possible injury in transmission by parcel-post, which transports articles of a very miscellaneous character. Professional photographers, who frequently send heavy packages of prints within the city-limits, will benefit by parcel-post.

PHOTO-ERA
MONTHLY COMPETITION

For Advanced Photographers

Closing the last day of every month. Address all prints to PHOTO-ERA, Monthly Competition, 383 Boylston Street, Boston, U. S. A.

Prizes

First Prize: Value $10.00.
Second Prize: Value $5.00.
Third Prize: Value $2.50.

Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

Prizes may be chosen by the winner, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in PHOTO-ERA, or in books. If preferred, the winner of a first prize may have a solid silver cup, of artistic design, suitably engraved.

Rules

1. This competition is free and open to any camerist desiring to enter.

2. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. ***Subjects which have appeared in other publications are not eligible, nor may duplicate prints be sold, or entered in competition elsewhere, before Photo-Era awards are announced.*** Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

3. *Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data.*

4. *Each print entered must bear the maker's name, address, the title of the picture and the name and month of the competition, and should be accompanied by a letter,* SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what competition it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA, unless otherwise requested by the contestant. If suitable, they will be published in PHOTO-ERA, full credit in each case being given to the maker.

6. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15, unless they are packed with *double thicknesses of **stiff** corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express very cheaply and with indemnity against loss.

7. The prints winning prizes or Honorable Mention in the twelve successive competitions of every year constitute a circulating collection which will be sent for public exhibition to camera-clubs, art-clubs and educational institutions throughout the country. The only charge is prepayment of expressage to the next destination on the route-list. This collection is every year of rare beauty and exceptional educational value.

Awards — American Scenic Beauties

Closed February 29, 1916

First Prize: Otto W. Bahl.
Second Prize: Clarence Teamer.
Third Prize: None awarded.

Honorable Mention: C. K. Baker, James C. Baker, Arnold Brigden, C. M. Campbell, J. H. Field, A. M. Holcomb, Carl H. Kattelmann, F. B. Schenck, Dr. F. F. Sornberger, Alice Willis.

Special commendation is due the following workers for meritorious prints: Albert W. Ayre, Frederick Cramp, Beatrice B. Bell, O. C. Dean, Eva L. Eden, F. Flannery, Franklin I. Jordan, Archie R. McKinstry Harry G. Phister, Kenneth D. Smith.

Subjects for Competition

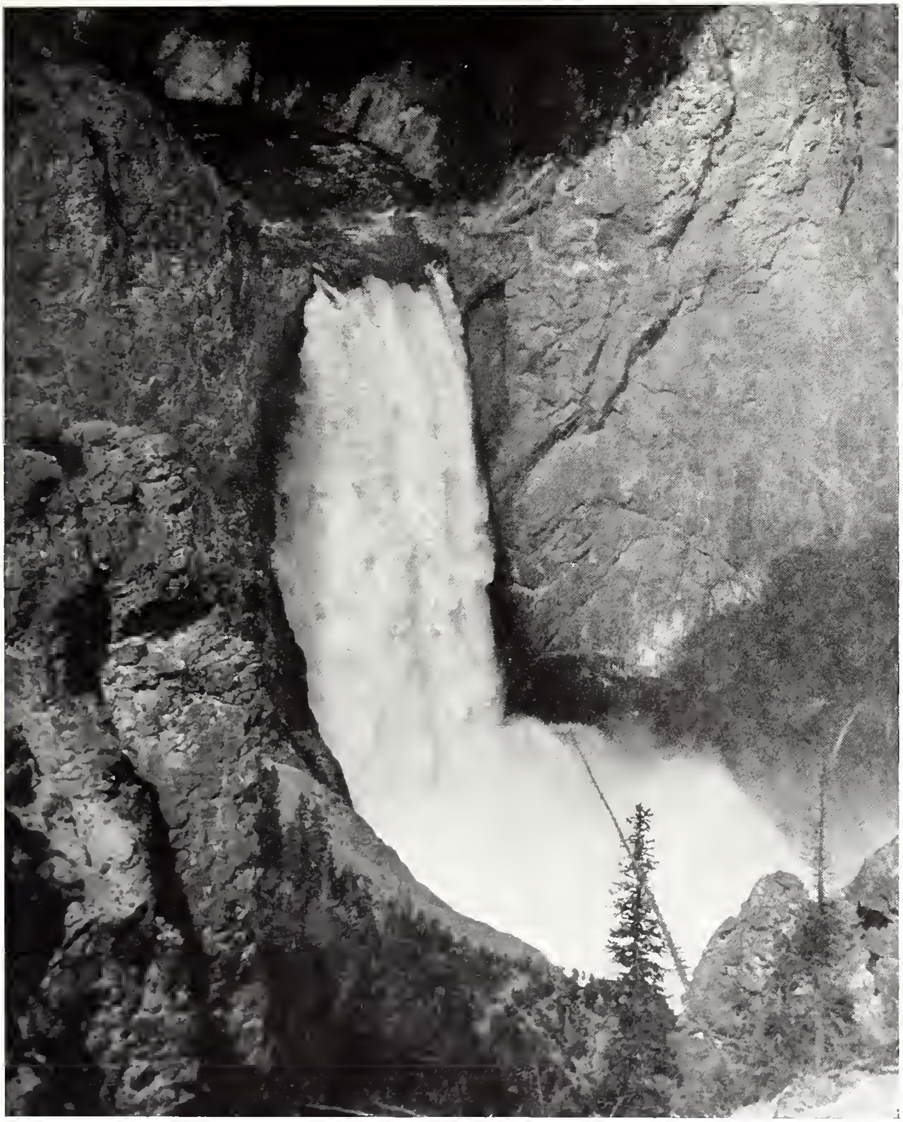
"Subject for PHOTO-ERA Cover." Closes April 30.
"Miscellaneous." Closes May 31.
"Speed-Pictures." Closes June 30.
"Nature-Study Subjects." Closes July 31.
"Figures in Landscape." Closes August 31.
"Field and Wood." Closes September 30.
"Marines." Closes October 31.
"Camp-Scenes." Closes November 30.
"Flashlights." Closes December 31.

Photo-Era Prize-Cup

IN deference to the wishes of prize-winners, the Publisher will give them the choice of photographic supplies to the full amount of the First Prize ($10.00), or a solid silver cup of artistic and original design, suitably inscribed, as shown in the accompanying illustration.

◆

ESTHETIC pleasure is like sympathy, which is not always provoked by resemblances, but often by differences. It is not true that a people seeks in works of art only its own image. At certain moments one seeks for one's contrary; one feels the necessity for antithesis. That is why Gretchen loves Carmen.—*Jean Breton.*



THE LOWER FALLS OF THE YELLOWSTONE
OTTO W. BAHL
FIRST PRIZE — AMERICAN SCENIC BEAUTIES

Speed-Pictures — Photo-Era Competition Closes June 30, 1916

In this day when Americans are accused of being "speed-mad" it is not surprising that the speed-mania has invaded the realm of photography and driven inventors to the production of lenses and shutters that are equal to "freezing" the swiftest racing-automobile or the express-train at full speed.

The question of the art-value of such photographs is an open one. Perhaps ninety-nine out of one hundred are little more than curious — interesting as an example of the perfection of modern cameras, but lacking in pictorial value. This may be in part due to the workman's pride in his tools. He wishes to show what he can do — and he does truly marvelous things. The press-photographer's accomplishments in this line are simply wonderful, and his experiences would make interesting reading. The impossible situations in which he is required to "make good," like furnishing photographs of sporting-events in cloudy or rainy weather, or in evening-light, would daunt any but the "pressman," who has learned that to "stay with his paper" he must eliminate "impossible" from his dictionary.

The chief object in this and kindred work seems to be to "catch something doing" without much regard to what or when. If a figure can be caught in the air and so sharply defined that you can count the buttons, the stripes or the lacings, the *ne plus ultra* has been reached — regardless of the fact that the eye is incapable of recording any such picture, and that the positions are as a rule ungainly and awkward. They have the merit of being true to life, however, as the angular Remington horses are true to actuality as revealed in the instantaneous photograph, but lack that "poetry of motion" that is the spirit of such pictures as these of Schreyer. As a matter of fact, however, the latter appear to the ordinary observer to represent the facts more nearly as he sees them — for the eye does not separate the action into separate ungainly poses, but gives us the impression of swift, graceful, easy motion.

To obtain this impression of speed rather than the effect of a body miraculously sustained in mid air without motion is a very difficult thing in a photograph. Unless a sufficiently quick exposure is made blur and distortion come in to ruin our effects — and if we speed up too much at once the sense of motion is lost. The course between Scylla and Carybdis is a narrow and difficult one.

Perhaps the scarcity of really artistic photographs of this type accounts for the fact that so few are to be found in the files of Photo-Era. Most of those to be found are the ones submitted in contests, as in that devoted to "Outdoor-Sports," the winning pictures in which were published in October, 1915. The print winning first prize is a very successful one. The flying spray and wind-blown flag and garments are quite convincing. The second prize is more open to criticism, though for its kind it is unusually good. The leaning horses are well balanced by the single horse and the uprights of the building in the background — the moving feet of the horses are not needle-sharp, and on the whole the sense of action is good. But for all that, unstable equilibrium of the two horses is so obvious that one cannot avoid the feeling that it is only a miracle that keeps them from crashing to the ground. A similar competition, in 1913, January issue, brought out the print well named "Speed-Maniacs," of which the same criticism may be made.

The superiority of prints when a little longer time is given may be demonstrated by the admirable picture by Mr. Zerbe on page 138 of Photo-Era for September, 1915. The illusion of movement is well given, yet the data says six seconds' exposure. The print tells its story well, and although the figures are small the effect is even better at a little distance. The outlines are soft yet sufficiently clear. The movement in the lifted feet might easily have been disguised by retouching, but has been very wisely left untouched. Another beautiful and convincing picture — this time one really taken in $\frac{1}{100}$ of a second — is that by Dr. Sornberger, shown as winner of the first prize in April, 1915. The soft, hazy atmosphere adds much to the charm of this swiftly moving train. The pennant of smoke, and the tip of the cars as they round the curve, speak of swift motion, yet there is nothing to arouse a fear of impending catastrophe. The wheels grip the rails firmly, as one's subconscious mind demands they should. It is true as a record, and satisfies the requirements of art.

The amount of time that may be given without too great blur or distortion depends very much on the point of view. If the motion is toward or away from the camera, rather than across the field of view, exposure may be lengthened; but motion at right angles to the direction of the lens must be taken as quickly as possible to avoid distortion.

To create the illusion of motion, to convey to the brain the same impression it receives when the actual event is observed, should be the object of the pictorialist. This is not done by extreme blurriness — the elongated automobile with oval wheels; not by the needle-sharpness which enables us to read its license-number; but by the almost invariably "happy" medium, where speed is shown by softened outlines, a cloud of dust, a wind-blown pennant or garments, but no grotesque distortion.

There is a chance for difference of opinion in regard to the best equipment for speed-work. For the press-photographer and his ilk the *sine qua non* will be the Graflex, with its rapid lens and focal-plane shutter. One great advantage of this type of reflecting-camera is the ability it gives to see the full-sized image right up to the moment of exposure. A drawback is its bulk and weight, making it rather difficult to hold in position while waiting the propitious moment, and making it quite possible that it may be allowed to sag out of plumb, resulting in tipsy lines in the background.

The focal-plane shutter may be used on other types of camera, however, and is almost a necessity if very rapid movement is to be caught. A good all-around instrument is one equipped with both styles of shutter — one working between the front and rear element of the lens and one before the plate. Thus equipped one is ready for any emergency that may arise. Only beware of using one without leaving the other open — a futile and disappointing procedure.

When the action to be depicted is sure to take place at a certain place, as in races and athletic meets, a wise way is to use a tripod. Then one is more sure to choose a good position with regard to background, lighting, etc. A sharp focus can also be obtained on the desired spot, as at some hurdle or goal, and when everything is in readiness the shutter can be released at the propitious moment.

This method, though a safe and sure one, would seem rather to restrict one's activity, and the advocate of the Graflex would probably get more pictures, and among them there might be some lucky shots that would justify his arguments. The unexpected is what always happens, they say, and the Graflex-man is the one who records the unforeseen crisis.

Of course, rapid plates and slow development are the natural accompaniment of short exposures. For the

THE FINISH G. H. DAVIS, JR.

film-user, the Eastman Speed-Film provides a better basis than the ordinary roll-film, and if developed slowly in a tank, with a dilute developer, should give excellent results.

In this branch of photography, even more than in others, success depends on the "artistic sense" and the quickness of eye and brain which enable one to seize at once on a fortuitous grouping of good composition and pictorial arrangement. There is here no chance for posing and premeditation — the chance is gone almost as soon as discovered, and must be caught surely and successfully on the instant or not at all. He who hesitates is lost!

The outdoor-pageants so popular of late years offer great possibilities in their folk-dances, with picturesque costume and setting. Some very interesting things have been captured at these spectacles, and yet it is a field that will prove worthy of more cultivation.

Katherine Bingham.

Composition

To the beginner in photography who has no previous art-training the oft-reiterated advice to give heed to good composition in his pictures sometimes becomes rather irksome, but a rudimentary knowledge of the simplest rules of composition is essential to success if he aspires to the pictorial in his work.

The principle of first importance is that a picture must have one supreme interest, one thing that holds the eye, and to the supremacy of which all the rest of the picture contributes.

Another vital principle is that the picture-space should never be divided in the center. A good place for the chief division, as the horizon, for instance, is one-third of the way from either the top or the bottom of the print. It should be placed high when the chief interest is in the foreground, and low when the sky is of chief importance or the view is a broad expanse of sea or country giving the idea of wide spaces. The same space-division holds true of vertical division. If the trunks of trees cut the picture-space they should come much nearer one side of the print than the other.

The law of balance is also an important one, and one not quite so simple to apply. It might be illustrated by the steelyards, where a small weight on one side balances a much larger object on the other. So a large mass in the foreground on one side of the picture is balanced by a smaller object on the other side and farther in the distance.

There are many ways of establishing the supremacy of our chief object of interest. The simplest way, perhaps, is by leading-lines. Here, too, the center of the picture-space should be avoided, the interest placed at one side, whither all the chief lines of the picture should lead.

Suppose the interest to center in an old farmhouse, the ground should be thoroughly gone over and, if possible, a viewpoint found where the lines of a road or path start in the foreground and lead diagonally across the print to the house, located about one-third of the way from the other edge. If the line of a hill can be made to lead from the top toward the house, or a row of trees be included that lead in that direction, so much the better. Another way to secure predominance for the chief object is by contrast of color — a light object in dark surroundings or a dark object against a light-toned background, always remembering to avoid placing it too near the center of your picture-space.

In figure-compositions the triangular arrangement is always good. The head in a portrait is of course the center of interest, and lines of drapery or surroundings should converge at that point. The hands may be used to balance the face, but should be lower in tone so as not to draw the eye from the predominant interest.

All these rules conspire toward the same object — namely, that when one's print is looked at there should be no question as to what story it intends to tell; nothing must lead the eye away from that one interest, but all things should work together in harmony.

THE CRUCIBLE

A MONTHLY DIGEST OF PRACTICAL FACTS FOR PHOTOGRAPHIC WORKERS

With Reviews of Foreign Magazines, Progress and Investigation

Edited by PHIL M. RILEY

Readers are encouraged to contribute their favorite methods for publication in this department
Address all such communications to The Crucible, PHOTO-ERA, 383 Boylston Street, Boston, U. S. A.

Ferrous Oxalate for Black and Sepia Prints

Ferrous oxalate as an inexpensive emergency developer, recommended in Photo-Era for October, 1914, page 200, is certainly coming into wider use in England where the prices of all ordinary photographic developers are far higher than here. This is shown by the increased amount of space being devoted to it by the English photographic press, particularly *The British Journal of Photography*, from which the following extracts have been taken.

The importance of transferring gaslight and bromide prints developed with ferrous oxalate to an acetic acid clearing-bath, as described in Photo-Era, previous to fixing, rather than merely rinsing them in water, is specially emphasized. To transfer them to water will inevitably cause deposit of yellowish iron compound, which will be particularly noticeable in the whites. The prints require to be passed direct from the developer into a weak acid bath, the effect of which is to keep the iron compounds in a soluble state and to allow of their being subsequently washed out before fixing the prints. On this point it is hardly necessary to say that the washing between the treatment with acid and the fixing of the prints is necessary in order to prevent acid being carried into the fixing-bath, since the presence there of either acid or iron is detrimental to the lasting-quality of the prints and the purity of the whites. Thus it will be seen that the iron developer calls for precautions which are altogether foreign to the use of an alkaline developer and entail additional operations. But if the different conditions are borne in mind there is nothing to prevent the prints possessing quality equal in every respect, if not superior, to that obtained with alkaline developers.

In working off prints in considerable number the best plan is to use a first acid bath in ample quantity — e.g., an inch or two in depth and in as large a dish as can conveniently be employed. Here the prints can accumulate until the whole lot has been developed, after which they are transferred to a second acetic acid bath of the same strength and turned over in this for five or ten minutes. They then require to be washed in plain water for 15 or 20 minutes before being fixed.

While a fixing-bath of hypo only may be used, it is, we think, preferable to add also a fair dose of sodium sulphite for the purpose of taking up traces of acid which are carried into the bath in the prints and thus to supply a safeguard against an acid condition of the fixer. Where the fixer is made up with 3 or 4 ounces of hypo for every 20 ounces of water, half an ounce or an ounce of sodium sulphite crystals will be ample for this purpose.

It cannot be too emphatically stated that cleanliness of fingers and dishes is of prime importance in using the ferrous oxalate developer. Traces of pyro and of other developers in contact with the iron developer give rise to intense dark stains, while ferrous oxalate is also a developer which is extremely susceptible to traces of hypo. The dishes in which development is done should be kept for that purpose alone, and in first taking up the use of the developer it is well to get entirely new dishes for the developing-solution itself or to pick out those free of chips or cracks in the porcelain enamel and to make them chemically clean by rinsing with spirits of salt followed by ample washing in water.

When it is the aim to redevelop for sepia tones *The British Journal of Photography* recommends a chloride bleacher previous to sulphiding instead of the usual solution of potassium ferricyanide and potassium bromide. It is probably the cheapest bleacher one can use, considering the high prices of chemicals, and obviates the trouble of blue spots sometimes met with in bleaching prints, developed with ferrous oxalate, with ferricyanide and bromide. While in theory the acetic acid baths used after the iron developer should remove all iron compounds, in practice they sometimes fail to do so, and though the small amount retained is of no consequence whatever to a black-toned print, it may be enough to give trouble if ferricyanide is applied. There is no great difficulty in removing all the iron from a gelatine film, but in a print there is more paper than gelatine, and sometimes certain spots on the paper retain iron with an avidity that defies all the acid baths we can apply. If, therefore, we are obliged to use the iron developer it is obviously safest to give up ferricyanide as a bleacher or constituent of the bleaching-bath.

So far as good tones are concerned the following chloride bleacher recommended by T. H. Greenall is probably the most reliable:

A

Hydrochloric acid, B.P., 31.8 percent ..	3 ounces
Water to make	20 ounces

B

Potassium permanganate	40 grains
Water to make	20 ounces

To make the working-solution, mix in the order given: Water, 6 ounces; A, 1 ounce; B, 1 ounce.

This bleacher will not keep in the mixed form, but the separate solutions keep almost indefinitely. Although it will generally leave a certain amount of brown stain on the print, this will disappear in the sulphide bath. If it does not do so absolutely the following clearing-bath applied after toning will put matters right:

Oxalic acid	½ ounce
Water	50 ounces

Add a few crystals of sodium sulphite.

It may be noted that a very marked brown stain generally denotes either that the bleacher has been made up in the wrong order or that there is an excess of either A or B.

THE SHENANDOAH VALLEY CLARENCE TEAMER

SECOND PRIZE — AMERICAN SCENIC BEAUTIES

For some reason that is not at all clear some workers fail to get good tones with any chloride process. It is possible, however, to convert any of the chloride images produced into bromide images by simple immersion in a solution of potassium or ammonium bromide, of, say, 5- to 10-percent strength; and this is not a very extravagant proceeding, for such a bath will keep almost indefinitely. Mixed baths containing bromide do not keep so well because of the frequent deterioration of the other chemical included. On the other hand, the simple immersion of a well-washed chloride print into a bath of plain bromide does no harm to the solution. A little is lost by absorption in the paper, but a very large number of prints can be treated without materially weakening the bromide contained in the solution; hence a 10-percent solution can be used as long as enough of it remains to cover the prints.

Nothing need be said here about the sulphide bath, which, both in itself and its customary use, requires no modification whatever for prints developed with ferrous oxalate.

Workers on a large scale will no doubt be well advised to adopt hypo-alum toning under the conditions we are considering. The use of this method after ferrous oxalate cannot lead to any special troubles, while the results will probably be more satisfactory from the beginning than those obtained with unfamiliar chloride bleachers. Neither is there any particularly valid reason why the smaller workers should not adopt the same method, which is easier, more certain and far less trouble than most people imagine. Once the bath is in good order the process becomes almost automatic.

The Right Side of the Plate

As a general rule the film side of a dryplate can be determined by feeling one of the corners, for the emulsion being more or less matte on the surface is not so smooth as the glass. With some plates, however, particularly very fine-grain slow ones, there is little or no difference in the feel of the two sides, and mistakes can readily occur. It is not very advisable or in any way necessary to load slides, etc., in the full light of the safe-lamp; this is a task that can be done in the dark quite well, but, still, if a little safe light is available when wanted the question of the right side of a plate or paper can be determined with certainty. We have adopted the following system: The loading-bench is protected by a low vertical screen from light coming from the safe-lamp several feet away, and is, therefore, virtually in darkness; but over the low screen we can see the light from the lamp. If a plate is held horizontally just above the screen a reflection of the light can be seen on its surface and the glass side is at once determined by the clear reflection that it gives. The test occupies only a fraction of a second, therefore no risk is incurred. Bromide paper tested in the same fashion shows a peculiar glitter on the film side that is absent on the paper side, hence the test serves as well for it as for plates. If the lamp does not directly face the bench, a small hole can be made in the side of the lamp and covered with a safe-light. This is the case with our lamp. Quite a small aperture is sufficient, as all that is required is a beam of light directly facing the eye, and this beam may be as narrow as possible.

The British Journal of Photography.

A WINTRY DAY IN THE PARK W. STELCIK

FIRST PRIZE — BEGINNERS' CONTEST

A Pyro "Process" Developer

Mr. A. J. Newton, of the Engraving-Department, Eastman Kodak Company, advocates the following substitute for the regular hydroquinone-caustic "process" developer, pyro now being much less expensive than hydroquinone. It will give density almost equal to the standard formula if used for a little longer time, a preferred duration and temperature being 5 minutes at 70 ° F.

Sodium sulphite, anhydrous . .	$7\frac{1}{2}$ ounces	75 grams
Pyro	1 ounce	10 grams
Sodium carbonate, anhydrous	$2\frac{1}{2}$ ounces	25 grams
Caustic soda, pure	$\frac{1}{4}$ ounce	$2\frac{1}{2}$ grams
Potassium bromide	$\frac{1}{2}$ ounce	5 grams
Water to make	100 ounces	1 liter

Dissolve the sulphite in some of the water, then add the other ingredients in the order given. If it is required to keep the developer a long time it may be desirable to make up and keep the soda as a separate solution.

Pyro for Miniature Negatives

Among those enthusiasts who have been especially successful in the use of miniature cameras may be mentioned Mr. John Gordon, Jr., several examples of whose work have been reproduced in past issues of Photo-Era. Mr. Gordon is a devotee of tank-development, and ascribes much of his success to the formula he uses, which he believes tends to produce the clean-cut, fine-grain image essential for printing by enlargement. It is a slight modification of the Watkins Thermo Pyro-Soda formula, as follows:

Stock-Solutions

No. 1

Potassium metabisulphite	120 grains
Sodium sulphite, anhydrous	2 ounces
Pyro	240 grains
Water, cold, to make	15 ounces

No. 2

Sodium carbonate, anhydrous	2 ounces
Potassium bromide	60 grains
Water, hot, to make	15 ounces

The following table indicates the number of drams of each solution required for tray and tank use when made up to 3 and 10 ounces respectively for tray and tank use. The index-letters above the figures refer to Table "C," the classified list of plates of the Watkins Speed-Card for Termal Development.

V. V. R.	*V. Q.*	*Q.*	*M. Q.*	*M.*	*M. S.*	*S.*	*V. S.*
1	$1\frac{1}{3}$	$1\frac{3}{4}$	$2\frac{1}{4}$	3	4	5	$6\frac{3}{4}$

For instance, Cramer Crown, Seed 30 and Kodak film, S; Lumière Sigma, Seed 27 and Hammer Extra Fast, M.S.; Standard Orthonon and Ansco film, M; Marion Record, V.S.

From Table "A," the temperature-table, it is ascertained that the time of development in the tray is 5 minutes at 68°, $6\frac{1}{2}$ minutes at 60°, and 8 minutes at 54°. The time of development in the tank is 20 minutes at 66° and 30 minutes at 54°.

THE ROUND ROBIN GUILD MONTHLY COMPETITION

For Beginners Only

Closing the last day of every month. Address all prints to PHOTO-ERA, Round Robin Guild Competition, 383 Boylston Street, Boston, U. S. A.

Restrictions

All Guild members are eligible in these competitions provided they never have received a prize from Photo-Era other than in the Beginners' Class. Any one who has received only Honorable Mention in the Photo-Era Monthly Competition for advanced workers still remains eligible in the Round Robin Guild Monthly Competition for beginners; but upon winning a prize in the Advanced Class, one cannot again participate in the Beginners' Class. Of course, beginners are at liberty to enter the Advanced Class whenever they so desire.

Prizes

First Prize: Value $5.00.

Second Prize: Value $2.50.

Third Prize: Value $1.50.

Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

A certificate of award, printed on parchment paper, will be sent on request.

Subject for each contest is ***"Miscellaneous"***; but only original prints are desired.

Prizes, chosen by the winner, will be awarded in photographic materials sold by any dealer or manufacturer who advertises in Photo-Era, or in books.

Rules

1. These competitions are free and open to all members of the Round Robin Guild. Membership is free to all subscribers; also to regular purchasers of Photo-Era on receipt of their name and address, for registration, and that of their dealer.

2. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. ***Subjects which have appeared in other publications are not eligible, nor may duplicate prints be sold, or entered in competition elsewhere, before Photo-Era awards are announced.*** Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

3. *Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data.* ***Criticism on request.***

4. *Each print entered must bear the maker's name, address, Guild-number, the title of the picture and the name and month of the competition, and should be accompanied by a letter,* SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what contest it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of Photo-Era, unless otherwise requested by the contestant. If suitable, they will be published in Photo-Era, full credit being given.

6. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15, unless they are packed with *double thicknesses of* ***stiff*** *corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express very cheaply and with indemnity against loss.

Awards — Beginners' Contest
Closed February 29, 1916

First Prize: W. Stelcik.

Second Prize: James Allan.

Third Prize: Louis R. Murray.

Honorable Mention: Dr. W. G. Adams, Margaret Anderson, Edward L. Austen, Louis F. Bucher, S. S. Chojnacki, J. Louis Cunningham, T. D. Fields, V. Max Kennery, O. P. Lynum, C. A. Pierce, Mrs. H. G. Reed, H. B. Rudolph, R. C. Shultz, M. C. Still, Glenn E. Throop, William J. Wilson, Elizabeth B. Wotkyns.

Special commendation is due the following workers for meritorious prints: Howard E. Andelfinger, Marguerite Balthrope, Lamar Callicott, E. L. Clarke, Martha Curry, J. F. Eden, J. B. Gale, B. S. Grenelle, A. M. Kopeok, T. W. Lindsell, Arthur C. Link, Rudolph Motts, John A. Platt, Kenneth D. Smith.

Why Every Beginner Should Compete

The trouble with most competitions is that they place the beginner at a disadvantage. If advanced workers be allowed to compete, beginners have little chance to win prizes, and so quickly lose interest after a few trials.

There are two monthly competitions in which prints may be entered with prizes commensurate with the value of the subjects likely to be entered. They are: The Round Robin Guild Competition and the Photo-Era Competition. The former is the better one for a beginner to enter first, though he may, whenever it pleases him, participate in the latter.

As soon as one has been awarded a prize in the Photo-Era Competition, he may consider himself an advanced worker, so far as Photo-Era records are concerned, and after that time, naturally, he will not care to be announced as the winner of a prize in the Beginners' Class, but will prefer always to compete in the Photo-Era Competition for advanced workers. In accordance with this natural impulse, it has been made a rule by the Publisher that prize-winners in the Advanced Class may not compete in the Beginners' Class.

To measure skill with other beginners tends to maintain interest in the competition every month. Competent judges select the prize-winning prints, and if one does not find his among them there is a good reason. Sending a print which failed to the Guild Editor for criticism will disclose what it was, and if the error be technical rather than artistic, a request to the Guild Editor for suggestions how to avoid the trouble will bring forth expert information. The Round Robin Guild Departments, including those of personal counsel and criticism, form an endless chain of advice and assistance if members will connect the links.

THE ROUND ROBIN GUILD

An Association of Beginners in Photography

Conducted by KATHERINE BINGHAM

This association, conducted under the auspices of PHOTO-ERA, and of which PHOTO-ERA is the official organ, is intended primarily for the benefit of beginners in photography. The aim of the association is to assist photographers by giving them information, advice and criticism in the Guild pages of PHOTO-ERA and by personal correspondence. Membership is free to subscribers and regular purchasers of the magazine sending name and address to PHOTO-ERA, The Round Robin Guild, 383 Boylston Street, Boston, U. S. A.

Making the Most of Photographic Magazines

In this present day of "efficiency-systems" the photographic amateur who struggles on by himself making repeated failures without knowing why or wherefore has only himself to blame, for the knowledge and experience of those who have met and solved the same problems are freely his through the agency of the photographic magazines.

In nearly all of these, as in Photo-Era, much space is given each month to the needs of the beginner in photography. Articles are printed dealing with the various problems he is apt to encounter, contests are held where he can send his prints in competition with others from workers of his own standing, and in every way the effort is made to smooth out the rough places in the road he is traveling.

Take the always-difficult matter of exposure. In Photo-Era each month is an exposure-guide that gives valuable aid and covers almost any circumstances. A good way to make the most of these tables is to cut them out and mount them on five cards, cutting them into pieces to fit about a 4 x 6 mount. The table of plate-speeds is the only one that will not fit this size, and the last column of this may be on a separate card. These can then be fastened together and kept in the camera-case, so as to be always at hand when needed.

A good way to cultivate an appreciation of art-principles as well as technique is to look critically at the illustrations in the magazine, and if a picture is pleasing, determine what it is that makes it so; if unsatisfactory, try to locate the trouble. Then, having determined what your estimate of the picture is, turn to the back of the magazine and see if your verdict is that of the Editor, whose comments, under "Our Illustrations," will be found very helpful.

But it is not only the printed pages of the magazine which may be helpful to the novice. Criticism of the work of others, instructive though it may be, is of little value compared to discriminating comment on one's own efforts — and this the magazine stands ready to give. If your best efforts fail to give you desired results, then select some specimen-prints showing what you have tried to do and wherein you have failed of accomplishment, and some one of the editorial staff stands ready to point out to you where you have made your mistake and what you can do to improve present results, as well as how to make your future efforts come nearer to your ideal.

Having brought up your standard to the point where you are willing to try your strength against others of your own degree of experience there is open to you the monthly contest for beginners. In sending in prints for this contest, if a request and a stamp are sent with the entry, your prints will be returned with criticisms which will perhaps show you why you did not win the prize, and help you to carry it off eventually. Then aside from the print-criticism there is the "letter-box," where any query pertaining to any branch of photography will be answered as helpfully as possible. This should be an invaluable aid to the solitary worker if he would only avail himself of its privileges.

A great help in making magazine-literature easily accessible is to make a card-catalog of articles to which it may be desirable to refer in the future. When one subscribes for two or three magazines it not infrequently happens that when an emergency arises one has the feeling that something has recently been read that would help one out of the difficulty if it could only be found; but the task of looking over files of old magazines, with no definite idea of when or what in, is too hopeless, and that which is unavailable might as well be non-existent.

The making of the catalog is very simple and puts much valuable information within easy reach. When an article is read that gives practical information on any subject, make as many cards for it as its contents seem to require. For instance, take Mr. E. J. Wall's article on sepia-tones in Photo-Era for February. This should be indexed under several heads. Make one card-heading to read Sepia Tones on Developing-Paper. Another should read Developing-Paper, Sepia Tones on. In the last paragraph on page 59 is described a method of obtaining red tones — so two other cards should be made out giving this reference under Red Tones. Other cross-references might be made under Hypo-Alum Formulas, or any one of several others to which one feels that he may wish to refer.

If this is done for each magazine before it is filed away one will soon have a catalog for which one would not take many times its value.

These are some of the many ways in which one can make use of the photographic magazines of the day with great profit to one's self and one's work.

Transparencies

No paper-print comes so near to reproducing the delicate beauties of one's favorite negative as does the glass-transparency. To the beginner, perhaps, the making of transparencies looks like a task beyond his abilities, but any one who makes his own prints on developing-paper can, with only a little extra care and trouble, make satisfactory prints on glass.

The first requirement, after a good negative, is the slow transparency-plate. These can be had coated on ground-glass, and as one must have the ground-glass to bind with the transparency if made on clear glass it is advisable to procure it in the plate.

A light that is safe for the developing of paper may be too strong for the plates, so it is well to shield it with an extra thickness of orange paper before experimenting.

SECOND PRIZE
BEGINNERS' CONTEST

MOTHER'S DARLING JAMES ALLAN

The formula for developer that is inclosed with the brand of plate you procure is the best to use, for each manufacturer knows his own plate and what will give best results with it.

The exposure must be to artificial light, and will be much shorter than for the paper-print. Place the dull side of the plate (if on clear glass, otherwise the smoother side) in contact with the face of the negative, in the printing-frame, being sure that the edges of the plates are parallel, and carefully clamp the back in place. Exposure with an ordinary negative at a distance of seven or eight feet from a 16- candle-power electric light should be possibly 10 or 15 seconds, but so many things enter into the calculation of exposure that it is hard to give even an approximate time.

It is a great addition to the looks of the finished product if a mask is used to give a clear white, even margin to the plate. If negative and plate are the size of the printing-frame used, and are carefully adjusted therein, the rebate of the frame will answer the purpose; but the safer way is to cut very carefully a mask of the proper size to give an even, clear-cut white edge. This may be lightly attached to the negative, so that only the plate will have to be adjusted by the faint light allowable in loading.

The exposure should be such that the image will appear in a few seconds and reach full depth rather quickly. The distance that the frame is held from the light in printing will vary the amount of contrast, the contrast increasing with the distance. The finished print should be full of detail in both highlight and shadow, and sufficiently light in tone to allow all shadow-detail to be seen.

Several kinds of inexpensive holders are on the market, and are almost a necessity, though it is, of course, possible to improvise means of showing them If ground-glass plates have been used, a clear glass must be placed over the face of the print and bound with it. If clear glass is the foundation then a finely ground glass must be placed over the face. The two glasses may be bound together with strips of ribbon or cloth, to which a cord is sewn for suspending the whole.

Give your pet negative a chance to show its beauties in this way.

There Was a Reason

Interested amateur —"What became of that beautiful color-print made by your process you showed me several years ago?"

Color-photography expert —"Oh, that got so torn and used up from frequent showing that I had to throw it away. (*Mournfully*) It was the only good one I ever made."

Answers to Correspondents

Subscribers and regular readers wishing information upon any point in connection with their photographic work are invited to make use of this department. Address all inquiries to Correspondence Department, PHOTO-ERA, *383 Boylston Street, Boston, U. S. A. If a personal reply is desired, a self-addressed, stamped envelope must be enclosed.*

D. P. F.—**The red chalk tones** you so much admire are not the result of using a special paper, but are obtained by toning Cyko prints. The ordinary black print is first toned to sepia by the well-known hypo-alum method, formulæ for which will be found in almost any handbook. After washing thoroughly, to eliminate all traces of hypo, the print is immersed in the following salt bath:

Sodium chloride	1 ounce
Water	32 ounces

While this bath does not influence the final tone obtained, it is advisable in that it retards the toning-action somewhat and allows the gold to be selectively and evenly deposited when the print is subsequently immersed in the toning-bath, prepared as follows:

A

Water	15 ounces
Gold chloride	15 grains

B

Water	15 ounces
Potassium sulphocyanate	90 grains

Add one slowly to the other, stirring slowly meantime, so as not to precipitate the gold. This quantity will tone 75 prints 4 x 5, or an equivalent surface. Toning requires about ten minutes, after which transfer to an acid fixing-bath for twenty minutes, and then wash in the usual manner.

J. G. W.—**Failure to include wood-alcohol in the metol-hydroquinone developer** on page 89 of PHOTO-ERA for August, 1914, may cause difficulty in winter. The solution being considerably concentrated, it will partially crystallize if kept in a cold place. The addition of a proper amount of alcohol, and raising the temperature to 65 degrees, will re-dissolve the salts.

The slowness of working is also due, no doubt, to a low temperature. In winter there is always danger that trays and solutions will be too cold unless one works in a room that is always warm, or unless special precautions are taken. A paper-developer should be used, preferably at 70 degrees, and never cooler than 65. It is well to have a thermometer constantly in the tray.

The use of reflectors with an upright type of enlarger is somewhat difficult. Probably you will use opal glass or a condensor for diffusion. In either case we suggest a cluster of three or four burners in one fixture.

W. T. L.—**The grayish tone of your print** 1 may be due to any one of several causes; forcing the development might cause it, although it is more likely the result of too little bromide in the solution. It is possible, also, that the paper may be a little stale. This might also, in a measure, explain the small, round black spots. Some of these, however, appear more likely to have been caused by transparent spots in the negative.

Probably, as you say, the redeveloper is at fault in getting the sepia tone you wish. Of course, each brand of paper gives a slightly different tone in redevelopment, as it does in hypo-alum toning, and it is necessary to try out several and select the one giving the tone which happens to appeal most to you.

The other subjects you send are of good quality, although somewhat lacking in concentration of interest; 3 might be lighter to good advantage, and 6 is on too rough a paper for the size of the print.

O. W. J.—**An acid fixing-bath** suitable for both negatives and prints, and which employs all salts instead of including liquid acetic acid, is as follows:

Water	64 ounces
Hypo	16 ounces
Sodium sulphite, anhydrous	1 ounce

When fully dissolved add the following hardener:

Powdered alum	½ ounce
Citric acid	½ ounce

As to your **light for enlarging,** it is difficult to advise you definitely without knowing the exact type of enlarger you are using. Of course there are to be had clusters of three and four Welsbach burners, both upright and inverted, if you must continue to use gas. If electricity is available, the new Nitrogen Mazda lamp with a concentrated filament is excellent for an enlarger having condensing-lenses. The electric arc is most commonly used by professional enlargers.

A WINDY DAY LOUIS R. MURRAY

THIRD PRIZE — BEGINNERS' CONTEST

Print-Criticism

Address all prints for criticism, enclosing return-postage at the rate of one cent for each two ounces or fraction thereof, to Correspondence Department, Photo-Era, *383 Boylston Street, Boston, U. S. A. Prints must bear the maker's name and address, and be accompanied by a letter, sent separately, giving full particulars of date, light, plate or film, stop used, exposure, developer and printing-process.*

H. T.— Your picture of a garden-scene is filled with life; but from an artistic viewpoint white shirt-waists do not appear to advantage in a landscape against dark foliage. If the shirt-waist of the young girl in the foreground could be softened, either by reduction of the negative or by some other means, it would look much better, as, at present, the contrast between the dark shadows and the white dress-material is too marked.

O. B. H.— In your portrait of a child, the hands alone are in focus, which shows that the lens is out of focus for the rest of the picture. Besides, the normal human eye is distracted by viewing the picture of the child (ignoring the hands). Your lens, of the soft-focus variety, needs to be used more carefully.

Dr. O. H.— Your night-picture appears to be simply a print from an underdeveloped plate; for, at 5 o'clock p.m., particularly where water reflects considerable light, the row of buildings at the right cannot but show a large amount of detail, which, in an underdeveloped plate, is entirely suppressed. The sense of illusion is not present. This is always the case when the exposed negative — provided it has been properly timed — does not receive adequate treatment; although, in your case, the view itself may be underexposed.

P. W. W.— The portrait is good in some ways, but the gloved hands and dress are more conspicuous than the face. The matter of light and dark is simply reversed. Besides, in a portrait of this kind, white gloves are somewhat out of harmony, and a dark or medium-colored shirtwaist would have been better. An outdoor background does not harmonize with an indoor-portrait. It would have been better, in this instance, had the chin of the sitter been dropped a trifle, in order to conceal the nostrils. The eyes, in this pose of the head, should have been directed toward the lens.

H. M. W.— To avoid distortion in portraiture, use a lens with focus at least as long as the diagonal of your plate. A soft-printing paper is better for a contrasty negative.

L. C.—"Sturtevant's Fall." The rocks, right and left of the waterfall, which is a small one, are bathed in sunlight, and produce scattering masses of glaring white; whereas the water of the falls is too dark. The picture is somewhat of a paradox, as the water should be white and the rocks subdued in tone. This picture should be taken at a different time of day, when the direction of the light is changed, so as to emphasize the falls and allow the rocks to assume their natural tone.

C. L.—"In the Canyon." This picture, with a pool of water in for foreground, surrounded by rocks upon which the sun is shining with full force, constitutes an attractive camera-subject. The trees growing around the rocks are very well rendered, and the entire arrangement of pool, rocks and trees constitutes a very promising picture. I should advise you to try this scene again, but when the light is different. An afternoon-light, or a day when the sun is not shining very brilliantly, might yield a more artistic result.

J. H. W.— We quite concur with the suggested criticisms you offer about your print, and find little to add. The lack of gradation and texture in the dress of the child is particularly unfortunate. While undoubtedly due in a measure to overdevelopment, it is also, perhaps, the result of too strong lighting, which might have been mitigated by less concentration or the introduction of a diffusing-medium, such as cheese-cloth.

The objections to large hair-ribbons are that they break the natural lines of the head, and, as in this instance, when the ribbon is light, introduce a large and conspicuous spot of higher key than the face, to the detriment of unity.

It is common practice to modify the development of portraits somewhat. Thus you need not so much a new developer as an adjustment of the one you have. Let me suggest that you either reduce the time of development, say one-fourth, or reduce the strength of the solution that much by using less stock-solutions or more water, as proves most convenient. A trial will give you a basis to work from, and if the modification is too great try one-fifth or one-sixth. But print your negatives before judging them, for surprisingly thin portrait-negatives frequently yield excellent prints.

"WHO DID THAT?" M. C. STILL

HONORABLE MENTION — BEGINNERS' CONTEST

Photo-Era Exposure-Guide

Calculated to give Full Shadow-Detail, at Sea-Level, 42° N. Lat.

For altitudes up to 5000 feet no change need be made. From 5000 to 8000 feet take ¾ of the time in the table. From 8000 to 12000 feet use ½ of the exposure in the table.

Exposure for average landscapes with light foreground, river-scenes, light-colored buildings, monuments, snow-scenes with trees in foreground. For use with Class 1 plates, stop F/8, or U. S. 4. For other plates, or stops, see the tables on the opposite page.

*These figures must be increased up to five times if the light is inclined to be yellow or red.
†Latitude 60° N. multiply by 3; 55° × 2; 52° × 2; 30° × ¾.
‡Latitude 60° N. multiply by 2; 55° × 2; 52° × 1½; 30° × ¾.
¶Latitude 60° N. multiply by 1¼; 55° × 1; 52° × 1; 30° × ½.
§Latitude 60° N. multiply by 1¼; 55° × 1; 52° × 1; 30° × ½.

	MONTH AND WEATHER																			
	Jan., Nov., Dec. †					Feb., Oct. ‡					Mar., Apr., Aug., Sept. ¶					May, June, July §				
HOUR	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull
11 A.M. to 1 P.M.	1/32	1/16	1/8	1/4	1/2	1/32	1/16	1/8	1/4	1/2	1/50	1/25	1/12	1/6	1/3	1/60	1/30	1/15	1/8	1/4
10–11 A.M. and 1–2 P.M.	1/25	1/12	1/6	1/3	2/3	1/25	1/12	1/6	1/3	2/3	1/40	1/20	1/10	1/5	1/2	1/60	1/30	1/15	1/8	1/4
9–10 A.M. and 2–3 P.M.	1/12*	1/6*	1/3*	2/3*	1*	1/16	1/8	1/4	1/2	1*	1/40	1/20	1/10	1/5	1/2	1/50	1/25	1/12	1/6	1/3
8–9 A.M. and 3–4 P.M.						1/5*	1/2*	1*	1½*	3*	1/30	1/15	1/8	1/3	2/3	1/30	1/15	1/8	1/4	1/2
7–8 A.M. and 4–5 P.M.											1/20	1/10	1/5	1/2	3/4	1/20	1/10	1/5	1/3	2/3
6–7 A.M. and 5–7 P.M.											1/15*	1/8	1/2*	3/4*	1*	1/15	1/8	1/4	1/2	3/4
5–6 A.M. and 6–7 P.M.																1/10*	1/5*	1/3*	2/3*	1½*

The exposures given are approximately correct, provided the shutter-speeds are accurately marked. In case the results are not just what you want, use the tables merely as a basis and increase or decrease the exposure to fit the conditions. Whenever possible keep the shutter-speed uniform and vary the amount of light when necessary by changing the stop. **Focal-plane shutters require only one-third of the exposures stated above.**

SUBJECTS. For other subjects, multiply the exposure for an average landscape by the number given for the class of subject.

1/8 **Studies of sky and white clouds.**

1/4 **Open views of sea and sky;** very distant landscapes; studies of rather heavy clouds; sunset- and sunrise-studies.

1/2 **Open landscapes without foreground;** open beach, harbor- and shipping-scenes; yachts under sail; very light-colored objects; studies of dark clouds; snow-scenes with no dark objects; most telephoto-subjects outdoors; wooded hills not far distant from lens.

2 **Landscapes with medium foreground;** landscapes in fog or mist; buildings showing both sunny and shady sides; well-lighted street-scenes; persons, animals and moving objects at least thirty feet away from the camera.

4 **Landscapes with heavy foreground;** buildings or trees occupying most of the picture; brook-scenes with heavy foliage; shipping about the docks; red-brick buildings and other dark objects; groups outdoors in the shade.

8 **Portraits outdoors in the shade;** very dark near objects, particularly when the image of the object nearly fills the plate and full shadow-detail is required.

16 to 48 **Badly-lighted river-banks,** ravines, glades and under the trees. **Wood-interiors** not open to the sky. **Average indoor-portraits** in a well-lighted room, light surroundings.

PLATES. When plates other than those in Class I are used, the exposure indicated above must be multiplied by the number given at the head of the class of plates.

For Perpetual Reference

For other stops multiply by the number in the third column

As all the figures in the table opposite are based upon the use of stop F/8, or U. S. 4, it does not appear here among the ratios for other stops.	U. S. 1	F/4	× 1/4
	U. S. 2	F/5.6	× 1/2
	U. S. 2.4	F/6.3	× 5/8
	U. S. 3	F/7	× 3/4
	U. S. 8	F/11	× 2
	U. S. 16	F/16	× 4
	U. S. 32	F/22	× 8
	U. S. 64	F/32	× 16

Example

The factors that determine correct exposure are, first, the strength of light; second, the amount of light and dark in the subject; third, speed of plate or film; fourth, the size of diaphragm used.

To photograph an average landscape with light foreground, in Feb., 2 to 3 P.M., bright sunshine, with plate from Class 1, R. R. Lens, stop F/8 (or U. S. 4). In the table look for "Hour," and under the column headed "Bright Sunshine," note time of exposure, 1/16 second. If a smaller stop is used, for instance, F/16, then to calculate time of exposure multiply the average time given for the F/8 stop by the number in the third column of the table for other stops, opposite the diaphragm chosen. The number opposite F/16 is 4. Multiply 1/16×4=1/4. Hence, the exposure will be 1/4 second.

For other plates consult the table of plate-speeds. If a plate from Class 1/2 be used, multiply the time given for average exposure, F/8 Class 1, by the number of the class. 1/16×1/2=1/32. Hence, the exposure will be 1/32 second.

Speeds of Plates on the American Market

Class-Numbers. No. 1, Photo-Era. No. 2, Wynne. No. 3, Watkins

Class 1/3, P. E. 156, Wy. 350, Wa.
Ilford Monarch
Lumière Sigma
Marion Record
Seed Graflex
Wellington Extreme

Class 1/2, P. E. 128, Wy. 250, Wa.
Ansco Speedex Film
Barnet Super-Speed Ortho.
Central Special
Cramer Crown
Eastman Speed-Film
Hammer Special Ex. Fast
Imperial Flashlight
Seed Gilt Edge 30
Wellington 'Xtra Speedy

Class 3/4, P. E. 120, Wy. 200, Wa.
Barnet Red Seal
Cramer Instantaneous Iso.
Defender Vulcan
Ensign Film
Hammer Extra Fast, B. L.
Ilford Zenith
Imperial Special Sensitive
Paget Extra Special Rapid
Paget Ortho. Extra Special Rapid

Class 1, P. E. 111, Wy. 180, Wa.
American
Ansco Film, N. C.
Atlas Roll-Film
Barnet Extra Rapid
Barnet Ortho. Extra Rapid
Central Comet
Imperial Non-Filter
Imperial Ortho. Special Sensitive
Kodak N. C. Film
Kodoid
Lumière Film and Blue Label
Marion P. S.
Premo Film-Pack
Seed Gilt Edge 27
Standard Imperial Portrait
Standard Polychrome
Stanley Regular
Vulcan Film
Wellington Anti-Screen
Wellington Film
Wellington Speedy
Wellington Iso. Speedy

Class 1 1/4, P. E. 90, Wy. 180, Wa.
Cramer Banner X
Cramer Isonon
Cramer Spectrum
Defender Ortho.
Defender Ortho., N.-H.
Eastman Extra Rapid
Hammer Extra Fast Ortho.
Hammer Non-Halation
Hammer Non-Halation Ortho.
Seed 26x
Seed C. Ortho.
Seed L. Ortho.
Seed Non-Halation
Seed Non-Halation Ortho.
Standard Extra
Standard Orthonon

Class 1 1/2, P. E. 84, Wy. 160, Wa.
Cramer Anchor
Lumière Ortho. A
Lumière Ortho. B

Class 2, P. E. 78, Wy. 120, Wa.
Cramer Medium Iso.
Ilford Rapid Chromatic
Ilford Special Rapid
Imperial Special Rapid
Lumière Panchro. C

Class 3, P. E. 64, Wy. 90, Wa.
Barnet Medium
Barnet Ortho. Medium
Cramer Trichromatic
Hammer Fast
Ilford Chromatic
Ilford Empress
Seed 23
Stanley Commercial
Wellington Landscape

Class 5, P. E. 56, Wy. 60, Wa.
Cramer Commercial
Hammer Slow
Hammer Slow Ortho.
Wellington Ortho. Process

Class 8, P. E. 39, Wy. 30, Wa.
Cramer Contrast
Cramer Slow Iso.
Cramer Slow Iso. Non-Halation
Ilford Halftone
Ilford Ordinary
Seed Process

Class 100, P. E. 11, Wy. 3, Wa.
Lumière Autochrome

OUR ILLUSTRATIONS

WILFRED A. FRENCH

We are indebted to William Shewell Ellis, who has been so frequently and deservedly awarded the first prize in the Eastman Kodak Company's prize-competitions. An analysis of these successful pictures shows that they impressed the jury because of their freshness of idea, directness of appeal and clarity of presentation. The charm of youth, too, is a potent factor in Mr. Ellis's pictorial efforts, and one notices that good-looking models play an important part in this artist's compositions. These remarks apply to the caprice which decorates the front cover and page 219 of this issue. The oddity of arrangement — the result of chance rather than of intent, perhaps — is the rectangular design, which, while unconventional, may not possess the grace of line of other achievements by Ellis. But, whereas the pose is eminently pleasing, we regret that the left eye appears to have been slighted — an unfortunate shortcoming in the average photographic profile of to-day, and which is a detail to which the old masters in photographic portraiture gave due attention. This important matter has engaged my pen so often in these pages that I think it best to let it rest for awhile. No data, except that the picture was made with a regular professional equipment in the artist's professional studio.

Again we have the pleasure to favor our readers with a product of the studio of L. L. Higgason. See frontispiece. This time it is a genre, and a pleasing one. Like all the subjects from this young and progressive artist that have appeared in Photo-Era, this picture exhibits an appreciation of the pictorial possibilities with comely and intelligent models, also brilliant technical ability. As this is a genre — a story-telling picture — and not a portrait, it is not absolutely necessary that there should be a singleness of pictorial interest. The eye may pass from the fine features of the young girl to the tempting basket resting on her lap; and all is well. It is clearly the work of a well-trained professional worker and is praiseworthy throughout. Data: 8 x 10 studio-equipment; $14\frac{1}{2}$-inch portrait-lens, used at full opening; F/4.5; large north window; 8 x 10 Hammer plates; pyro; 8 x 10 prints.

The work of William S. Davis, the always reliable illustrator of his practical and instructive essays, is so pleasingly familiar to his readers that comment here is not necessary. See pages 211–215. Data: "Sunlit Woods;" page 212; bright August day; stop, F/11; Ideal Ray-Filter; 1 second; Inst. Iso. "Forest-Shadows;" November; good sunlight; 11.45 a.m.; Ideal Ray-Filter; Cramer Portrait-Iso; stop, F/8.

In admiring the fragment of the arched cloisters of "Old Capistrano"— page 222 — with its fascinating effect of sunlight and shadow, many a reader will recall the buildings, in imitation of the old Spanish Missions in California, which he saw at the exposition of San Diego. I wonder if these temporary structures would not have gained in picturesqueness had the ruined appearance of the original missions been reproduced. The corner of the San Juan Capistrano Mission, which is in a state of ruin and decay, is a better subject for artistic treatment, pictured by H. P. Webb, than the new and finished mission structures at the San Diego Exposition. Data: Ansco view-camera, 8 x 10; Zeiss Protar wide-angle, F/20; May, just before sunset, bright light; exposure with cap, about 2 seconds; Hammer Non-Hal. Ortho.; Edinol; Azo Grade B Hard.

In his "Three Wonderlands of the American West," Thomas D. Murphy says: "California has in her ruined missions and old Spanish traditions a touch of human antiquity that lends an added charm to this enchanted land. The atmosphere of sacred romance that hovers around England's abbeys is not lacking in the moss-grown, vine-covered ruins that are found in so many delightful spots in the Sunset State. The story of the mission is a fascinating one, from its inception in zeal and poverty and rise to affluence to its decadence and final abandonment."

Genuine, refined, artistic taste and admirable workmanship mark the work of H. R. Decker. His still-life "Apples," in Photo-Era for June, 1915, was one of the best things of the kind that ever appeared in this magazine. The decorative panel, "African Daisies," page 224, is a masterpiece. Though a common subject it appears here as a thing of exquisite beauty, gracefully balanced, true in color-values and refined in treatment. Would that others fond of photographing flowers would study Mr. Decker's unpretentious but highly successful arrangement and take its lesson to heart. Data: August, 11 a.m.; sun; indoors, 3 feet from window covered with cheesecloth; 5 x 7 Korona view-camera; 8-inch R.R. lens; stop, U. S. 8; 5-time Isos color-screen; 12 minutes; Cramer Isonon; A. B. C. Pyro; $\frac{1}{2}$ normal strength; 5 x 7 print on Professional Studio Cyko.

H. L. Bradley, who occasionally contributes some delightful bit of scenery of Mount Desert Island, off the coast of Maine, is represented on page 225 by a glimpse of Frenchman's Bay. On this day a strong blow from the East ruffles the waters of the bay and drives them shoreward. Mr. Bradley knows the value of an interesting foreground in a photographic view, as exemplified in his "Windy Day." Data: October, 2 p.m.; sun; 5 x 7 Korona camera; 10-inch Voigtländer; stop, F/8; $\frac{1}{50}$ second; 5 x 7 Orthonon; pyro-soda; 5 x 7 print on Professional Cyko.

William Ludlum, Jr., is familiar to Photo-Era readers by the realism of his camera-effects. Like most progressive workers, and satisfied with his success as a technician, he is breaking away from conventional literalness and imparting something of the imaginative to his work, thus adopting the standard of the interpreter. This pleasing change is noticeable in his view of Mt. Utsayantha, in New York State, page 226. Instead of representing the locality with perfect reflections, as many amateur workers delight to do, Mr. Ludlum chose a time when picturesquely more favorable conditions prevailed, utilized a friendly foreground and, particularly, a near, graceful tree, and produced a picture replete with pictorial charm. Data: August, 3 p.m.; bright sun; 5 x 7 Premo; $6\frac{3}{4}$ inch Velostigmat; stop, F/16; 6-time color-screen; 1 second; Orthonon plate; pyro; 5 x 7 Cyko Glossy Soft; Duratol.

Among picture-yielding localities of Greater Boston none is more productive than the region known as "Back Bay Fens." The basis is new-made land through which the waters of Muddy River are allowed to course until they find an outlet into the Charles.

New vegetation of trees and shrubs mingles picturesquely and freely with the eccentric progress of the stream; beds of flowers have been laid by a wise and generous municipality; rustic bridges span the errant waters, upon which glide rare species of water-fowl; tree-fringed roads and residential streets intersect the district, at whose western extremity rises a magnificent array of civic, ecclesiastic and residential buildings. Appreciating this wealth of camera-material, and equipped with artistic ability and discriminating judgment, an amateur worker, Ernest H. Washburn, visited here frequently last autumn and successfully exposed several dozen plates. The interesting character of this series of prints is exemplified by "A Fenway Vista," page 228. Foliage, water, sky and architecture are here merged into a delightfully harmonious ensemble. The reflections are not objectionably obtrusive, the water is normally brilliant, the foliage sanely clear and the architectural background, with a beautiful sky, terminating a well-ordered and animated composition. Data: October, 4.30 P.M.; clear, but sun behind cloud; R. B. Cykle Graphic 5 x 7; 11½-inch Zeiss Protar; stop, F/16; no color-screen; ¼ second; Orthonon; Eastman pyro tank-powder; developed 18 minutes at 68° F. in tank; 5 x 7 Azo D Hard for reproduction.

The embryonic baseball star looking eagerly for an engagement, as pictured by Horace W. Leeds, page 230, appeals directly to every reader with sporting-blood in his veins. The earnest expression of the youngster, his size and attire, and the disproportionate size of the bat constitute a picture of pathetic interest. The technique is unmistakably excellent. No data.

The episode of Manila, pictured on page 231, proceeds from the camera of a clever artist in America's Easternmost possession. Mr. Squires has been very successful in practising his hobby in a climate that is very trying. The pictorial proportions and the management of chiaroscuro of his picture are admirable, and proclaim the artistic and technical ability of a master-worker. No data.

No technically finer photographs of lepidoptera than those produced by Edwin A. Roberts, pages 232-234, have ever appeared in this magazine. The tonal beauty of the original prints is superb.

The Photo-Era Monthly Competition

It may be proper to admit, at the beginning, that the competition "American Scenic Beauties" failed to yield entries that were satisfactory in character. Most of them were subjects of local importance and without a special degree of beauty. There were not a few familiar subjects of national interest, but done in a hasty, perfunctory way. This accounts for the absence of one of the prize-awards and the paucity of awards in the Honorable Mention class.

The Lower Falls, in the Yellowstone National Park, page 237, is less familiar than the Upper Falls, but it forms a magnificent spectacle. The viewpoint chosen by Mr. Bahl yields a picture of unconventional beauty and convincing impressiveness, although the gray tonal effect of the print does not appear to compensate the lack of depth and brilliance one expects to find in a subject of this kind. Data: August, 1913; Goerz 4 x 5 Ango camera; 6-inch Dagor lens; F/6.8; Premo film-pack, bright light; no data as to stop, time or exposure; enlarged from part of negative on Enlarging-Cyko Buff.

"The Shenandoah Valley," page 241, is a welcome contribution to these pages, not only on account of its marked, artistic beauty, but of its historic importance. This country, in Virginia, is filled with landmarks and associations of the American Revolution and the Civil War, and, best of all, is teeming with delightful camera-material, as evidenced by Mr. Teamer's engrossing and successful composition. The picture, "Harper's Ferry," was taken from a high point known as Jefferson's Rock, and shows both Virginias — West Virginia in the foreground and Virginia to the right of the view. Data: August 22, 1915; cloudy, but bright; 7½-inch Turner-Reich Anastigmat; stop, F/22; 2-time ray-filter; 1 second; 5 x 7 Cramer Inst. Iso; pyro; clouds reduced slightly; reduced negative made from contact positive, as Mr. Teamer's enlarger would not take larger than 3¼ x 4¼ plate; enlargement on Enlarging-Cyko Studio; exposure, 70 seconds.

The Beginners' Contest

"A Wintry Day," page 242, captivates the beholder by reason of its novelty of subject and beauty of treatment. The composition is eminently artistic, and the color-values are admirably truthful. Mr. Stelcik is to be complimented for achieving a result so brilliantly successful. Data: January, 1916; sunlight; 5 x 7 Conley camera; R. O. lens; Conley Safety shutter; stop, F/64; ray-filter; 1 second; Ortho plate; pyro in tray; 5 x 7 print on Azo B.

The engaging home-portrait of a little boy, page 245, appealed to us successfully because of the simple and unaffected pose, the excellent technique including the true rendering of the flesh-tints and the absence of distracting accessories, such as bright hair-ribbons or grotesque-looking toys. Data: February, 1916, 1 P.M.; medium light outdoors; 5 x 7 view-camera; 9-inch Verito; stop, F/8; 1 second; Seed 27; Duratol; Special Carbon Velox. Enlargement.

The refined and delicate character, as well as the original beauty of the subject — so appropriate in a small, direct print — constitute the charms of Louis R. Murray's successful effort, page 246. The effect of the strong wind is convincing, and without sacrifice to important detail. Data: November, 1915, 3.15 P.M.; good sunlight, swift clouds and heavy wind; 5 x 7 Premo; 9½-inch B. & L. R. R.; stop, U. S. 16; Ingento C. color-screen; approximately 1 second; Standard Orthonon plate; hydro-duratol; direct 5 x 7 print.

The little genre, page 247, is a bit of child-life, a department in amateur work of which we should like to see more evidences. This class of work may call for an unusual degree of skill, patience and resourcefulness; but it will certainly repay the time and effort. All will agree that the conception, management and lighting of Mr. Still's picture are admirable, with the possible exception of the background, which slightly obtrudes itself. But this was unavoidable on account of limited quarters. Data: 5 x 7 Premo; 8½-inch R. R.; stop, U. S. 8; flashlight; 5 x 7 Cramer Crown; Rytol; direct print on Aristo Platino; toned with toner.

The military picture, page 255, is as admirable a piece of work as it is timely and — welcome. It is an impromptu snapshot by W. F. Turner, Jr., the popular manager of the photo-department of the Pinkham & Smith Company, Boston. The original print is an enlargement made with a new and brilliant enlarger sold by this firm; but more of this in the June issue. Data: October, 1915, 2.30 P.M.; 4 x 5 Auto Graflex; 6-inch Zeiss 1 C, F/4.5; used at full opening; good light; $\frac{1}{215}$ second; Cramer Crown; hydro-metol; 10 x 12 print on Enlarging-Cyko with P. & S. Bromide Illuminator.

* * *

Ideas of healthy democracy have facilitated independent opinion in matters of art. Art-criticism has not now its former pedantic tone. It misinforms the public, but it condemns nobody to death — *Ary Renan.*

ON THE GROUND-GLASS

WILFRED A. FRENCH

Increasing Prices of Photo-Specialties

No worker, when looking on the Ground-Glass, likes to see objects distorted or abnormal. Unfortunately, instead of normal prices for photographic chemicals and certain other indispensable specialties, the Ground-Glass reveals greatly increased and almost prohibitive prices. I have received a number of letters in which the writers complain of this deplorable state of affairs. Some of them criticize their dealers for advancing prices arbitrarily, believing that they should not try to take unfair advantage of the consumer, but sell their stock of scarce chemicals at ante-bellum prices until it is exhausted. Of course, in cases where dealers are obliged to pay more for a certain class of goods, they are justified to charge an advance, but only in just proportion to the increased price.

There is much to be said in defense of the policy of dealers in selling such almost unobtainable chemicals as metol, eikonogen and ferricyanide. It would be easy for easy-going dealers to sell to some "far-sighted" photographer more stock than he could consume in several years, merely to enable him to speculate with it. But at the same time, such dealers would be depriving actual consumers — some of their best customers — of a legitimate supply of such a necessity as metol, now scarcely to be had.

It therefore behooves the dealer to handle such a condition with prudence and justice; for if he show a tendency to be avaricious, favoring a speculator at the expense of a regular customer, he will lose more than gain in the end. Instances of rapacity along this line have been reported to me by displeased workers, who have avowed their intention to give their patronage only to fair-minded dealers.

The Measure of the Art-Critic

It is, indeed, remarkable that, amid all the sanguinary horrors on land and sea, and in the air, and in view of the threatened decline of British supremacy, our friend "The Walrus" bobs up every week as cheerful and merry as if there were no such word as "war." His is the orchestra whose merry strains reassure the audience and avert a panic. One of his recent weekly essays is devoted to the art-critic, and his spontaneous humor is seen in the following two paragraphs:

"I do not subscribe to the common argument that a man is not justified in criticizing anything until he can produce something better himself. I may be a good judge of cigars without knowing anything about the cultivation of cabbages, and the conversion of their leaves into choice Havanas. I can legitimately grumble at stodgy plum-duff, though I cannot distinguish between a rolling-pin and a nutmeg-grater. Similarly, I hold that a man may be a good judge of photographs and not know a lens from a lentil. I am a whale at finding faults in prints; I can locate more faults to the square inch than any man breathing; but I can no more make a passable print than I can lift myself off the ground by my long ears.

"The chief requisite for the photographic critic is not ability, but check. He must get a pedestal as high as the Nelson column, and declare that it is too short for him. Also he must possess a particular kind of nerve. He may be such a coward that when he is tossed into the air by a bull he is afraid to come down; yet he must be prepared to stand up to a multiple-medaled photographer and tell him to his face that, without exception, his choicest masterpieces are unmitigated rubbish. It is the foundation of the art-critic's creed that he must adopt an uncompromisingly hostile attitude toward photography in all its forms and phases, and he must premise that art does not and cannot enter into it in any shape or form, whatever."

Camera-Fiend Has Close Call

The amateur "camera-bug" almost landed in jail Thursday. He carried a small Kodak in his hip-pocket, and when he appeared in police court, and sat down in a hard-seat chair, the Kodak struck audibly. Several patrolmen heard the suspicious sound and promptly jumped to the conclusion that anything of a hard substance in a man's hip-pocket must be a concealed weapon. They trailed the camera-fiend to the corridor, where explanations resulted in a laugh, and the officers posing before the "bug's" Kodak.

Evening-News, Detroit.

Aside from the fact that, in this instance, the pot called the kettle black, the camerist in question had a lucky escape. How different might have been the ending had he reached for the Kodak in its accustomed place (his hip-pocket) in an attempt to snapshoot a couple of brawlers in a western saloon. He might now be in the Elysian Fields, busily engaged in making celestial snapshots.

Where Photographs Are Detrimental

Not long ago a prominent photo-pictorialist, wishing to requite a kindness, presented to a friend two good-sized framed enlargements, of a pictorial character, with which to relieve the bareness of the walls of his apothecary-shop. The walls — right and left, as one enters — are tinted in a beautiful gray, and nothing is allowed to encroach upon their simple dignity. Below, to a height of about eight feet from the floor of this high-studded apartment, and extending the entire length of it, are mahogany display-cabinets and shelves filled with specialties, and in front of these the usual show-cases and counters. The wares displayed are of the choicest kind, and everything reflects the refined taste of the proprietor.

Some time afterwards the amateur visited the store to note the effect of his pictures, and found that the walls were still bare. But his friend, the proprietor, explained by saying that he did not see how he could alter the character of the scheme of fitting up his store, which was simplicity and harmony.

"You see," he continued, "your magnificent pictures would make an adorable effect, one on each wall. My customers would gaze on them in admiration; but I want them to concentrate all their attention on the goods in the show-cases, on which I have spent considerable thought and expense."

After a somewhat embarrassing pause the two friends effected a compromise, mutually agreeable, and now the two enlarged landscapes decorate the hall of the apothecary's seaside-home.

EVENTS OF THE MONTH

Announcements and Reports of Club and Association Meetings, Exhibitions and Conventions are solicited for publication

Photographic Section, Portland Society of Art

The annual exhibition of photographs by the Photographic Section of the Portland Society of Art was held in the galleries of the Sweat Memorial Art Museum, Portland, Me., from March 2 to March 27.

While it is perhaps difficult to compare exhibitions of different years, still it is the opinion of most of those who have seen this year's showing that the standard was the highest of any which has been held since the Portland Camera Club became associated with the Art Museum, four years ago.

A great part of the work exhibited seemed to be the product of the soft-focus lens, yet these lenses were used with moderation, there being a tendency to suppress detail without losing all sense of line and modeling.

The exhibition, so far as processes are concerned, was very well balanced, gum, oil, platinum, bromide and gaslight paper being represented. Perhaps the most striking of the pictures were the multiple gums by Dr. Rupert S. Lovejoy, which were beautiful examples of the possibilities of this process. His "Close of Day," a fine orange and yellow sunset-picture, attracted a great deal of favorable comment.

Another noticeable feature of the exhibition was the evident care used in selecting the medium or paper to produce properly the effect desired. This was well shown in two snow-scenes, which were hung side by side. One, by Francis O. Libby, a cold-gray bromide, illustrated the bleakness of the winter's day; the other, by Frank H. Faught, showed the sunlight streaming through the forest in the late afternoon, the yellow-toned print depicting with startling reality the yellow winter-sunshine.

As usual, the Portland Camera Club had several surf- and marine-views, in which work they have always excelled. Among the best of these were Arthur P. Howard's "Thunder Cliff," C. M. Jaquith's "Surf, Back Shore Peak's Island," Frank Laing's "Breaking Away" and H. F. Noyes's "Rolling In." The skies and the tone-values in the water and surf were specially well handled in these pictures.

A very interesting development of the work of the local men was the use of the figure in the landscape. Good examples of this were William T. Starr's "Going to Market," Carl A. Jordan's "Feeding-Hour," and "Plowing," by H. A. Latimer. In this connection may be mentioned the interesting genre-studies by George H. Hodgkins. His picture "Hoisting the Sail" was a typical scene along the water-front.

The work of the exhibitors from outside the Portland Camera Club was well up to the standard of former years, although some familiar names were absent. William B. Carter had a delicate and soft-toned "Winter-Sunset," while among the pictures of Dwight A. Davis the one entitled "Among the Flowers" exhibited the possibilities of the soft-focus lens in portraying the glorious summer-sunshine.

Irving Kimball's set of portrait-studies evidenced originality of pose and accessories, and B. J. Morris had a striking character-study of John Hageman.

The Chicago Photo-Fellows were well represented — indeed, the annual exhibition of the Portland Camera Club has always contained representative work from this organization. As usual, it was distinctive and extremely artistic. Special mention might be made of C. W. Christiansen, who sent three pictures, two of which were decorative studies, showing careful composition and good treatment of the background.

The work contributed by the Bangor Photocraft was diversified in subject and process. The portrait of Dr. Humphrey, by George L. Francis, was a fine example of the work of that club.

Taking the exhibition as a whole, it might not satisfy entirely either the realist or the impressionist; but perhaps that, in itself, is the best praise for the show.

Economical Coating for Blue-Print Paper

As a result of the great increase in the price of potassium ferricyanide, or red prussiate of potash, which is extensively used as a coating-material for blue-print paper, an economical method of preparing the substance has been devised by the Department of Agriculture. Before the beginning of the war, potassium ferricyanide could be obtained for 55 cents a pound. It now sells for about $6 a pound, and, moreover, it is exceedingly difficult to obtain in this country, even at that price. Since blue-print papers in this country are coated almost exclusively with potassium ferricyanide, and all mechanical equipment for its preparation and use is built for this as the coating-material, the rise in price has worked quite a hardship upon both the producers and users of blue-print paper.

Potassium ferricyanide is produced by oxidizing a solution of potassium ferrocyanide with chlorine gas. At the same time a small amount of potassium chloride is produced. Investigations by the Bureau of Chemistry show, however, that the presence of this amount of potassium chloride in the coating of the paper does not interfere with the color and durability of the print. It is unnecessary, therefore, to separate the potassium chloride by crystallizing the potassium ferricyanide, provided that the latter is to be used on the spot and soon after it is prepared.

The apparatus devised by the Bureau of Chemistry for preparing in this way potassium ferricyanide solution is simple. At the prevailing prices of the materials, potassium ferricyanide solution can be made by this process at a cost of approximately $2.80 per pound, calculated on the dry-salt basis. At the prices which prevailed before the war, and which may be regarded as normal, the cost would be approximately 35 cents per pound.

Allowing for possible loss, 100 pounds of potassium ferrocyanide should yield about 75 pounds of potassium ferricyanide. Probably 10 pounds of chlorine would be required also. That is, $1\frac{1}{3}$ pounds of potassium ferrocyanide oxidized with approximately $\frac{1}{8}$ pound of chlorine would yield 1 pound of potassium ferricyanide.

In February potassium ferrocyanide was quoted at $2 per pound, and liquid chlorine can be obtained in iron cylinders for 15 cents a pound. At these prices, as has already been said, a pound of potassium ferricyanide in solution can be made for approximately $2.80 per pound, whereas it is now quoted on the market at $6 a pound.

This saving is, of course, much greater than under normal conditions, when technical potassium ferrocyanide can be obtained for 25 cents per pound and technical potassium ferricyanide for 55 cents per pound. The price of the potassium ferricyanide at all times will be greater than the price of potassium ferrocyanide, since the former is prepared by oxidizing the latter with chlorine, followed by repeated crystallizations to separate the potassium chloride formed at the same time — an unnecessary refinement in blue-print coating. It seems probable, therefore, that even under normal conditions the simple procedure devised by the Department of Agriculture for the preparation of potassium ferricyanide solution will prove profitable for users of large quantities of blue-prints.

A complete description of the apparatus and its use, together with a blue-print diagram, may be had upon application to the Office of Information, U. S. Department of Agriculture, Washington, D. C.

The Hurter & Driffield Memorial

The Royal Photographic Society of Great Britain is making plans for some sort of permanent memorial commemorative of the invaluable services of Messrs. Hurter & Driffield, who laid the foundation of all modern scientific photography, and to whom is due the discovery of the rapid dryplate of the present day. Probably it will take the form of a reprint of all the articles published by these eminent investigators, together with explanatory notes and comment by the highest authorities of to-day; also an annual lecture to be delivered in their honor and published in the photographic press.

The following committee, appointed by the council of the R. P. S., has the matter in charge: Sir W. de W. Abney; Major-General J. Waterhouse; George E. Brown, editor of *The British Journal of Photography;* F. F. Renwick, secretary; W. B. Ferguson, treasurer. Subscriptions to any extent, and no matter how small, will be received gladly, and should be sent to the American Auxiliary Treasurer, Mr. E. J. Wall, F.R.P.S., Syracuse University, Syracuse, N. Y. Mr. Wall announces that the Eastman Kodak Company has promised $1,000.

More 3A Kodak Data

For the benefit of those who have found useful information in Mr. Franklin H. Smith's article, "Speed- and Exposure-Tables for a 3A Kodak," in Photo-Era for February, the following further explanatory information may be of interest. It refers to Plate I, on page 73.

B blur.

E circle of confusion for an object located at "N."

J circle of confusion for an object located at "K."

R blur plus circle of confusion for an object located at "N."

Q blur plus circle of confusion for an object located at "K."

Note that "R" in equation (1) and "Q" in equation (3) are usually assumed as $\frac{1}{100}$, $\frac{1}{200}$, etc.

Platinum Discovered in Spain

Platinum is a scarce commodity nowadays, and every report of the discovery of a new supply is cheering news. The latest comes from the mountains near Ronda, Spain. The Spanish Government is said to have taken possession of the ground, and the work of developing the mine will be carried on under the direction of the Geological Institute.

◆

Everything requires study.—*Alfred Stevens.*

A Boon to Professional Photographers

It is true that the transmission of photographs is restricted to third-class mail — at the rate of two ounces for one cent — but this refers to packages up to four pounds in weight. As explained elsewhere in this issue, when the weight of the package exceeds four pounds it goes by parcel-post, and right here is where the professional photographer, who frequently sends off heavy packages of prints, can save considerable money during the year. The economy is noticeable particularly in his own postal district, where a package weighing five pounds may be sent to any point for only seven cents! Packages *must weigh over 4 pounds to be accepted by the government as parcel-post,* and suitable material, such as heavy strawboard or rough wooden boards, may be used to make the packages weigh the required amount.

For the benefit of professional workers we have prepared from official data the following table:

5 pounds for 7 cents in local zone (local postal district).
  Each additional 2 pounds, 1 cent.
5 pounds for 9 cents in first zone, 1–50 miles.
  Each additional pound, 1 cent.
5 pounds for 9 cents in second zone, 50–150 miles.
  Each additional pound, 1 cent.
5 pounds for 14 cents in third zone, 150–300 miles.
  Each additional pound, 2 cents.
5 pounds for 23 cents in fourth zone, 300–600 miles.
  Each additional pound, 4 cents.
5 pounds for 32 cents in fifth zone, 600–1,000 miles.
  Each additional pound, 6 cents.
5 pounds for 41 cents in sixth zone, 1,000–1,400 miles.
  Each additional pound, 8 cents.
5 pounds for 51 cents in seventh zone, 1,400–1,800 miles.
  Each additional pound, 10 cents.
5 pounds for 60 cents in eighth zone, over 1,800 miles.
  Each additional pound, 12 cents.

Insurance of Fourth-Class Mail or Parcel-Post

Fees and conditions.— Fourth-class or domestic parcel-post mail (but no other) may be insured against loss, rifling and irreparable damage upon payment of a fee of 3 cents for value not exceeding $5, or 5 cents for value not exceeding $25, or 10 cents for value not exceeding $50, or 25 cents for value not exceeding $100, in addition to the postage, both to be prepaid with stamps affixed. It may not be registered.

Such mail may be insured at any post-office or station thereof, or by rural carriers. The sender must fill out an insurance-tag, which will be furnished him on request, to be attached to the parcel.

Return-receipts for insured parcels may be obtained by endorsing the parcels "Return-receipt desired."

Indemnity for lost insured parcels is paid for the actual value within the limit of insurance. No indemnity is payable on account of mere partial damage. However, when an article or any separate part thereof is so damaged as to render it wholly worthless, it is regarded as lost, provided it was packed and endorsed in accordance with the postal requirements. No indemnity is paid for labor, workmanship, etc., in repairing partial damage. Claims for indemnity must be filed within six months from date of mailing.

An Omission

In mentioning the prizes awarded in the 1915 Kodak Advertising-Contest, the name of Mr. William Shewell Ellis, of Philadelphia, was unintentionally omitted. He won the highest prize, of $500, paid for the best new slogan with a photograph illustrating it. This was Class VI, and only one prize was offered.

Don Scott

While in Boston in February, Mr. Don Scott, the popular instructor of the Eastman Professional School, caught a severe cold, which later developed into pneumonia, of which he died in Indianapolis April 4. He was buried at his old home, Friendship, N. Y. His death deprives the Eastman School of one of its most able demonstrators and the photographic profession of a much esteemed man. Mr. Scott is survived by his wife and mother.

Howard Magill Phillips

It is with the utmost regret that we record the death of Howard Magill Phillips, on March 31, of acute pneumonia. Only forty-eight years old, and in the prime of life, he was associated with his brother, Ryland W. Phillips, in the Phillips Studio, 1507 Walnut Street, Philadelphia. Although his efforts were directed chiefly to the business end of the studio, as a result of which his clientele included many prominent persons, he was an adept photographer, and his death will be rightly regarded as a distinct loss to the profession.

Gustavus A. Brandt

It is our sad duty to announce the death, at his home in Washington, D. C., of Gustavus A. Brandt, since 1899 secretary and the very life of The Postal Photographic Club, and one of the best known and most widely loved amateur photographers. He died of pneumonia, March 17, and was buried according to the ritual of the G. A. R., having served his country in the Civil War and occupied a position in the office of the Adjutant General of the U. S. Army from 1864 until the time of his death. A man of rare personal qualities and superior attainments, his life was ennobled by a knowledge of good literature, music and art. His punctuality was characteristic; indeed, the regularity with which the club albums were issued established a record which will always be remembered for its sacrifice of personal ease that the club might be efficiently served. A touching instance of his fidelity was shown by his anxiety during his last illness for the issuing of the April album on time.

No Limit

The Eastman Kodak Company issues a bulletin warning producers of photographic supplies to husband their material with the utmost economy. Chemicals and other products necessary to this industry, because of the enormous demand for them in other directions, created by the war, are rapidly getting beyond reach — in price and quantity obtainable.

Here is one more instance of the alarming effect upon many industries in this country produced by European markets where uncontrolled extortion is now allowed free play. What is to become of American manufacturers if they have to buy the commonest materials at prices constantly advanced by the feverish demands of war?

Take the ordinary metals used in a thousand ways. Copper ought to be 16 cents a pound. But since Europe will now pay from 27 to 29 cents for it, manufacturers in this country who have to have copper are expected to accept the higher figures as the market price. Zinc is one of the commonest metals. Yet it is selling around 30 cents a pound, three times its usual cost. Even the humble lead has increased in price more than 50 percent.

Again, the price of common, everyday blotting-paper has gone up amazingly. Why? Because blotting-paper is made from cotton-rags, and the Du Pont Powder Company is bidding for all the cotton-rags in sight at 9 cents per pound.

These soaring war-prices may mean profit for the few. But what about the many for whom they mean only that ordinary articles cost more and more because the prices of materials essential to their production are boosted ever higher?

Holland, facing a similar problem, has attempted, at least, to solve it. The Dutch Government allows Dutch producers and manufacturers to dispose of 40 percent of their products to foreign customers at any price they can get. The remaining 60 percent must be sold at home at standard prices.

The United States cannot afford to ignore injustice either to its industries or to its millions of consumers.

It is the desperate demand of Europe against the healthy demand of this country. It is the extravagance of colossal destruction against the normal needs and resources of thrifty producers.

Is there to be no protection for the latter?

Bulletin of Photography

READY FOR THE CALL

W. F. TURNER, JR.

LONDON LETTER

CARINE AND WILL A. CADBY

All the early part of this month the conditions for photography have been most abnormal. Those snow-photography enthusiasts who go to Switzerland for inspiration have had a wonderful chance to find their subjects at home. Snowstorms have been raging while the thermometer has kept exceptionally low for the time of year, so that not only was everything covered thickly, but remained so for days. Naturally, our illustrated press has given us plenty of snow-scenes; but, alas! for our printing-processes — the snow is rarely depicted as white. The titles, however, save the situation and tell the tale. For instance, were it not for the heading, "Wounded Soldiers Snowballing," we might have thought they were pelting each other with balls of mud.

In the photographic world there are already signs that there is a better time coming for us all, and there has been a breaking-out into social functions. The Press Photographers' Association gave a party in Fleet Street — where else could its members have found such a suitable and historic spot for their rendezvous? Some interesting experiences were related by those who had come recently from the front, and a wallet was presented to Mr. Sturdee, a relation of our admiral of the same name.

Shortly after this, the Royal Photographic Society gave a luncheon, which, in spite of the awful weather-conditions, was well attended and a distinct success. To most people's great regret Mr. Furley Lewis's year of presidency is over. This office is not an easy one to fill, these war-years, and it was a stroke of luck for the society that it got such a popular individual to fill it.

The new president is Mr. John H. Gear, who is, perhaps, our greatest expert in technical photography. He understands every process under the sun, but seems to be known best as the master of the oil and bromoil-processes.

Last week yet another luncheon was given by the Photographic Convention of the United Kingdom. Evidently the conventioners missed their annual meetings, which used to take place every summer and last a week. Many of the beauty spots of our own and neighboring countries were visited by the delegates to the convention, and it used to be a delightful holiday, for picnics, outings and evening-entertainments were sandwiched in between the lectures and photography in a most satisfactory manner. For the first time in thirty years, no meeting was arranged last June, and this luncheon was probably the outcome of a wish of the members to forgather once more and keep in touch until better times come again.

The Camera Club is continuing its lectures. "The Berner Oberland," by Mr. George Rodman, is, however, a rather tantalizing one. Why should we be shown such attractive pictures, when it is virtually impossible for English people to visit Switzerland? On hearing this complaint one of the Camera Club members remarked that we must look on it as the nearest thing we shall get to the Alps till the war is over.

The present exhibition at the Camera Club is held by Mr. Tilney, the well-known art-critic. Having seen some excellent multiple oil-prints in color by Mr. Tilney, some years ago, we went to the Camera Club imagining that we were to see photographs, and were rather disappointed to find that Mr. Tilney was exhibiting his oil-paintings. One need hardly say that our disappointment had nothing to do with Mr. Tilney's work, only the experience was a little like the well-known one of expecting tea and drinking coffee! The show was barely open and the catalogs were not yet out, so we cannot name the picture which pleased us most; but it was a sympathetic little snow-scene — perhaps our photographic eyes understood it better than the more vivid sunset-effects of which Mr. Tilney had a whole panel. As critics, we all have a great respect for Mr. Tilney, even when we do not see quite eye to eye with him; for he is fair, honest and very trenchant.

Hammersmith is not a very attractive suburb of London, but many of us will be visiting it this month to see Mr. A. L. Coburn's one-man show of photographs. If anything could tempt one to go in for the photogravure process, it would be Mr. Coburn's examples. It means labor, time, and many difficulties, but seems so well worth it when one sees what Mr. Coburn achieves.

SOLDIERS IN THE MAKING

The present is certainly the day of the small camera, especially for those in either of the services. The big prizes offered by our press for thrilling snapshots have stimulated the buying of apparatus that actually will go into a pocket, and which may bring its owner fame as well as a substantial sum.

A near relative of ours who commands a merchant ship on government service enjoyed special opportunities to get exceptional snapshots of the war. He was returning from the East, not only with a valuable cargo, but with rolls of exposed film valuable to him, but probably a good deal more so to the enemy. His vessel was torpedoed off Tripoli, and the ship's company, in its two small boats, was ordered to come alongside the submarine, and our captain, after seeing his good ship sent to the bottom, had the additional trial to witness all his personal belongings, amongst which was the little camera, being taken aboard the submarine. He tells us that the grief at the loss of his ship was naturally his all-absorbing feeling; yet the sight of his photographic apparatus being handled familiarly by the enemy caused for the moment the sharper pang. But even this grim situation had its touch of humor, for the tell-tale rolls of film had been destroyed the moment the submarine appeared.

Last Sunday our village-grocer called, and, after a good deal of beating about the bush, disclosed his errand. He is in the Volunteer Training-Corps for men above military age. His eldest son, nineteen years, has already been in training for the line for eight months, and was home for his forty-eight hours leave before being drafted to France. His second boy is working hard to become a soldier in his cadet-corps at school. They would all be separated on the morrow — would we take their photographs? They might never be all together again. Who could refuse? Plates were soon exposed, and the illustration we give from one of them is just a simple photographic historical record in miniature of the transformation of England. In August, 1914, our grocer was rapidly becoming a rather stout, middle-aged, peace-loving citizen, engrossed in his business and in the education of his sons for mercantile careers. The eldest boy was already at work in a London warehouse, and the little one's chief interests were football and cricket. Now they are all soldiers in the making, with a very considerable amount of military education already absorbed. So it is all over England.

Royal Photographic Society

The sixty-first annual exhibition will be held as in the past during the months of August and September. Mr. C. E. Kenneth Mees has again been appointed one of the judges in the Scientific Section in order to facilitate the collection of American exhibits and to forward them to London, thus relieving the maker of all difficulty and expense. Those wishing to be represented should communicate with Mr. Mees, care of the Eastman Kodak Company, Rochester, N. Y., who will gladly forward an entry-blank.

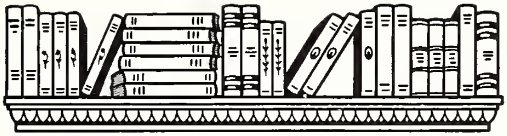
For several years the American exhibit in the Scientific Section has been a comprehensive one and of much interest to English workers as showing what has been accomplished on this side of the Atlantic; and it is earnestly desired by the Council of the R. P. S. that the United States continue to be fully represented in this exhibition.

1916 Kodak Advertising-Competition

The backbone of the national advertising of the Eastman Kodak Company is now based on photographs received through the annual competition, which has now become a permanent feature of the campaign. These pictures are not necessarily photographs made with Kodaks, but pictures showing Kodaks and Brownies in action, and suggesting the many and diverse delights of amateur photography.

As usual, the prizes are well worth while, ten in all, ranging from $100 to $1,000 each, and totaling $3,000 in cash. Indirectly this competition is also beneficial as a training in photography for advertising-purposes — a field which is growing rapidly.

Complete particulars and entry-blanks will be supplied on application to the Advertising Department, Eastman Kodak Company, Rochester, N. Y.



BOOK-REVIEWS

Books reviewed in this magazine, or any others our readers may desire, will be furnished by us at the lowest market-prices. Send for our list of approved books.

The British Journal Photographic Almanac, 1916. Edited by George E. Brown, F. I. C. Numerous illustrations. Price, 50 cents; cloth, $1; postage extra, according to zone. New York, U. S. A.: George Murphy, Inc., 57 East Ninth Street, general sales-agent.

The appearance of this useful handbook, the bible of photography, is especially welcome at this time, when we are beginning to realize more fully than ever before the many difficulties which must stand in the way of its production. Surely we can but admire the courage and determination of the publishers to continue this voluminous annual despite the war. True, it has lost something of its familiar bulk; but that is confined almost entirely to the advertising-pages, which have very naturally suffered through the loss of much foreign patronage and the necessity to curtail space on the part of certain British manufacturers.

The text includes the usual grist of formulæ, standard tabular matter and the Epitome of Progress, with its quotations from most of the leading photo-journals of the world. Instead of the review of novelties in apparatus — there being virtually none — 52 pages have been devoted to a summary by individual firms of the British resources in the manufacture of photographic materials and apparatus. And it is, indeed, a formidable array covering virtually every department of this many-sided industry. As usual, however, the principal feature consists of a comprehensive article by the editor, being devoted, this year, to a detailed review of all the photographic printing-processes, materials for which are now on the market.

Metol Substitutes

It is but natural that the great scarcity of Metol, and exorbitant price when obtainable, has led to the introduction of Metol substitutes in one form or another. No doubt there are concerns and individuals who are taking unfair advantage of this unfortunate situation by selling compounds that are very inferior and no substitutes for Metol at all. Fortunately, of such meretricious products we have little or no knowledge, for the reason that, knowing Photo-Era's determined stand against all schemes of a doubtful character, the producers or agents of Metol substitutes who have approached us are entirely reliable, and Photo-Era readers will make no mistake to patronize them if in need of substitutes for Metol or other important photo-chemicals. Thus we can recommend well-known chemical firms, including Merck & Co. (Photol), Berlin Aniline Works (Metol substitute) and Du Pont Powder Company and the Abbott Alkaloidal Co. (hydrochinon). Another reputable firm (as advertised in this issue) is selling original Hauff developers and other chemicals. For firms or products other than these the Publisher of Photo-Era assumes no responsibility, but will be glad to investigate any question along this line that may be brought to his notice.

WITH THE TRADE

A New Cooper Hewitt Pamphlet

THE article "Portrait-Lighting with Mercury-Vapor Lamps," by the Gerhard Sisters, which provided the cover and leading feature of the January issue of PHOTO-ERA, has been reprinted in pamphlet form by the Cooper Hewitt Electric Co., Hoboken, N. J. And a very attractive job they have made of it; certainly it should go a long way toward convincing professional workers of the practical value of this wonderful type of lamp in the studio. Copies of this pamphlet may be had by those interested upon request.

Here is a New One

CHARLES G. WILLOUGHBY, one of the most enterprising and up-to-date photo-supply dealers in the business, announces that his is the first photographic house in New York City to inaugurate an automobile delivery-service. The idea is one to command the serious consideration of progressive dealers in other large cities where this sort of active coöperation with studio and commercial photographers doing a large business will be appreciated.

The Harvey Exposure-Meter

A NEW list of plate-speeds has just been issued for this meter, and the number of plates and films included will be further increased from time to time. Although the H & D numbers vary somewhat from those of other lists they will be found to work well with the Harvey meter. Since it was first brought out this device has been adapted to use with motion-picture cameras, thus greatly broadening its sphere of usefulness.

An Incident in Price-Raising

IF there is a photo-supply dealer who has had little or no experience in raising or lowering (cutting) prices, let him read the following incident, which illustrates this phase in any mercantile business.

A certain retail dealer in gasolene, doing business in the suburbs of Boston, always keeps his price of gasolene one cent below that of his competitor, on the same street. One day last March the higher-priced dealer advanced his price from 24 cents to 25 cents per gallon. His rival, knowing of this advance, was about to raise his price to 24 cents, when one of his customers, a shrewd business-man, advised him to stick to 23 cents, which was done. The result was that the business of the higher-priced dealer at once began to drop off. Greatly alarmed, he quickly put the price back to 24 cents; but of no avail — his customers did not return. They liked the fair-minded policy of his competitor.

The price of gasolene has advanced since then, and continues to soar. The two rivals are still, as before, one cent apart; but the "get-rich-quick" dealer refuses to come down to the price of his conservative rival. If he did so, it is more than likely that his competitor would at once recede by one cent, for it is the latter's purpose always to be one cent behind his rival.

This interesting competition should be noted by some of our photo-supply dealers. They might not wish to emulate the example of either one of these two gasolene dealers, but come to a business-like understanding and maintain a uniform price on every photographic commodity.

Bromide Enlargement Frauds

THE privilege to be swindled is the undisputed right of every free-born American citizen. Some people find a certain degree of satisfaction in the exercise of the right, hence the innumerable schemes to defraud the public. One of these is the popular offer, "Films Developed Free," or "A Bromide Enlargement Free." This class of advertisements is rigidly excluded from PHOTO-ERA.

An offer of this kind consists of supplying, entirely free, an 8 x 10 bromide enlargement. The advertiser then explains that for the sum of one dollar he will furnish a hand-colored 8 x 10 enlargement from your negative. The enlargement is *free*; but the dollar pays for the coloring of it. As a matter of fact, the coloring is so poor as to be scarcely worth even 10 cents, and the shrewd purveyor clears 90 cents profit for an enlargement that any first-class house will supply for fifty cents!

One dollar, however, is a fair price for a soft-focus enlargement made from your negative by the Pinkham & Smith Co., Boston, Mass., as advertised in this issue; for the Publisher has seen some admirable work of this sort done by this thoroughly reliable firm.

G. Gennert in the Motion-Picture Field

A CATALOG of motion-picture apparatus has just been issued by G. Gennert, 24 East 13th St., New York City, which contains information of value to every prospective purchaser, and may be had on request. This department of the Gennert business has become quite extensive, and now includes a very complete line of cameras, projectors, machinery and sundries required for the studio, exchange and manufacturer.

The Wollensak Catalog

THE 1916-17 catalog of lenses and shutters recently issued deserves the careful perusal of every camerist contemplating the purchase of a lens or shutter. Most PHOTO-ERA readers know what Wollensak quality infers, and the line of goods manufactured by this firm is so diversified that almost any requirement of the amateur or professional worker has been anticipated and met. The booklet is handsomely conceived and executed and so appeals to the eye as well as to reason.

A High-Class Photo-School

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Boston Evening Transcript.

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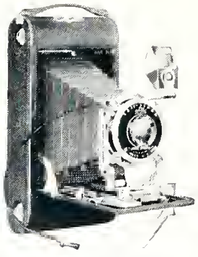

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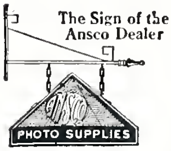
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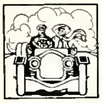

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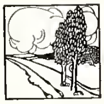

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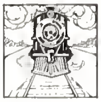

THE END OF THE TRAIL
W. H. RABE

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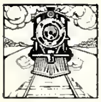
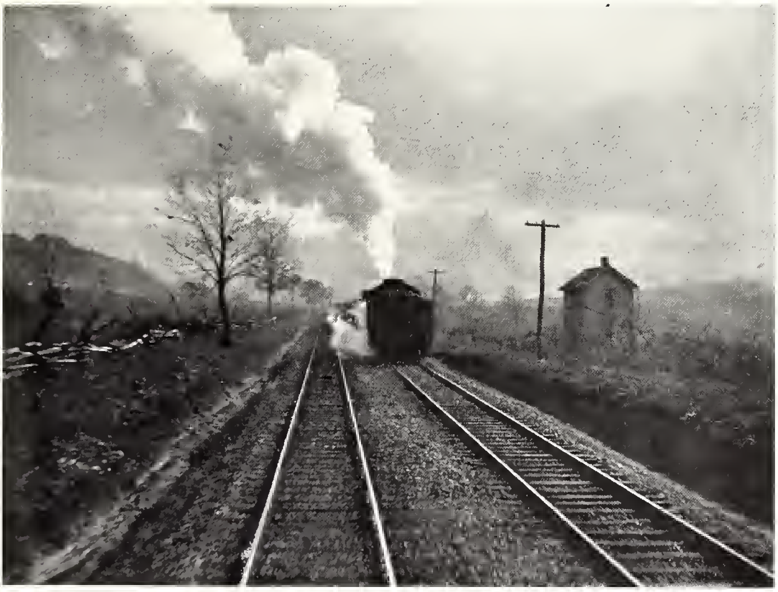
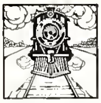






THE POWER OF STEAM WILLIAM H. RAU

How I Photograph Railroad-Scenery

WILLIAM H. RAU

THE photographing of a line of railway such as the Pennsylvania Railroad, or the Lehigh Valley Railroad, requires some knowledge of the scenery along the line, and a complete outfit of lenses, plates and photographic paraphernalia, and would include the making of pictures of scenery, bridges, terminals, groups, details — in fact, any subjects that might be suggested by a Division-Superintendent, to whom the work is very often assigned.

The Pennsylvania Railroad Company is, probably, one of the first which realized the value of photographs of the scenery along its line to advertise it, and placed the matter in charge of the Advertising-Agent in the General Passenger Department.

When the operator is not familiar with the scenery, it is well for him to go slowly over the division that he is to photograph, and select points of view, noting the time of day when he considers the conditions most satisfactory, and in this way learn just where to stop on the next trip over to make his pictures. This, in a general way, is satisfactory, although at times the conditions of light vary to such an extent that another trip must be made. I found it necessary, at some places, to stay at the point of view from which a special picture was to be taken and await weather-conditions rather than to go away and come back.

In order to do the work most rapidly and satisfactorily, a private car is necessary, if more than a few days are to be spent on the road, and in

MAKING A PANORAMA OF MAUCH CHUNK WITH A MOESSARD CAMERA

this respect the Pennsylvania Railroad Company equipped the first car I had with a cooking-outfit. But we seldom needed it, and found hotels and other conveniences close along the line, of which we availed ourselves; but we always slept in the car. At times an arrangement was made to connect our car with a night-train which would land us in the morning at a point selected. Therefore, to be in the car was an advantage.

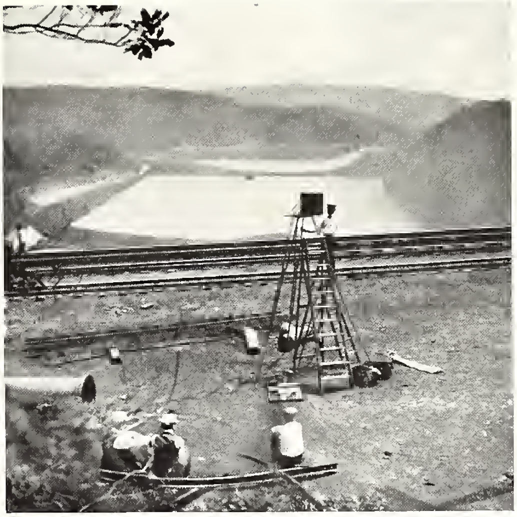
The Pennsylvania Railroad Company wished especially to have a good picture of the Horseshoe Curve, something not possible until films came into use. I had a panoramic camera, built under my personal direction, with which a film 47½ inches long and 18 inches wide could be used. It would embrace an angle of 165 degrees, and, as the point of view for making a picture of the Horseshoe Curve was from the toe of the horseshoe — at which point there was very little opportunity for a location for a camera — a platform was built, and from this I made observation as to the angle of lens needed, and had the camera built to suit that lens. The nearest track to the camera was only twenty feet away. This required a wide-angle lens, and I adopted at the time a Ross 15-inch Portable Symmetrical, and made a dummy camera on which I fitted the lens, to satisfy myself that it was an optical possibility. This was in accord with a camera that had been built abroad by Moessard, although his camera used a longer-focus lens, and could not have made the picture desired by the Pennsylvania Railroad Company, as railroad-men want to show the rails. Scenery alone does not satisfy them, and as the Pennsylvania Railroad claims to be the standard railroad of America, if not of the world, its rails and bedding are very desirable in a picture. The results with this camera were eminently satisfactory, and the pictures were used by thousands and distributed all over the world. It is probably the best-known picture I have produced. For that reason, I was always careful to have my name on every copy, but placed it modestly where it would not obtrude. At this time there were only two tracks on the Horseshoe Curve. Owing to the increased amount of traffic, the Pennsylvania Railroad Company added two more tracks to its entire Pittsburgh Division. This required a good deal of blasting and building of trestles with fill-in, and opened up more room for a new panoramic picture. By this time roll-films could be used and a different panoramic camera was available, so I made a new picture with less distortion in the foreground because of the increased distance at which I

MAKING A PANORAMA WITH AN EXTENSION TO THE CAMERA could place a camera from the nearest track, and since then this 60-inch print has taken the place of the original picture of this subject.

In all my work, whenever possible to get the plates — either orthochromatic, in the early days made by Carbutt, or later the Cramer Iso — I used them, and the negatives, which were mostly 18 x 22, showed wonderful quality in landscape-work.

I had cut-films made by Carbutt and Seed in my first panoramic camera, and found that in many cases I could use a flat picture of this size. Therefore I had an extension built which could be attached to the back of the 18 x 22 camera, and had two holders constructed, which were flat. I had a backboard which would hold the films in position, and used a lens of wide angle in the mountains. In this way I made many pictures with other lenses than the panoramic one, which limited me to the use of one lens.

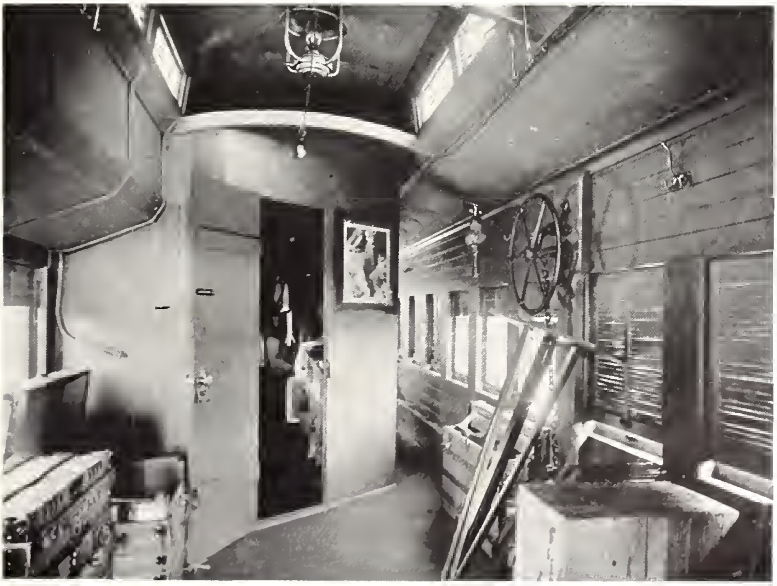
At that time I also had difficulty to get albumen paper the size and quality I wanted; but some of these pictures are still hanging in the Hotel Walton in Philadelphia and were made twenty-five years ago, and they are as clear and fresh as the day they were made. As the paper with glossy gelatine surface came into the market we began to use this, but it was so unreliable and unstable that I took up platinum, and found the printing of films in sunlight was difficult, as the print could not be looked at without a changing of the negative in expansion and contraction, so that unless the print could be put in the sun, and the time measured by watch, the print was likely not to be sharp. Of course, developing-paper eliminated all that, and we have facilities for making prints to-day up to ten feet in length.



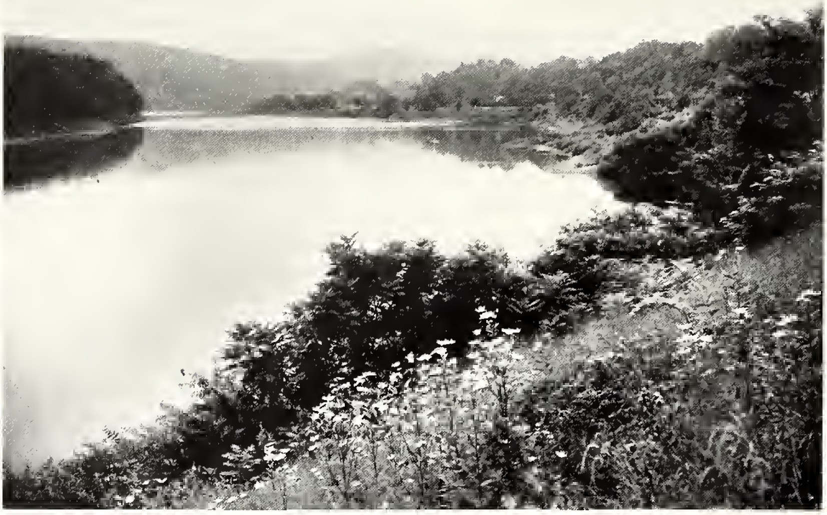
MAKING A PANORAMA OF THE HORSESHOE CURVE WITH A CIRKUT CAMERA

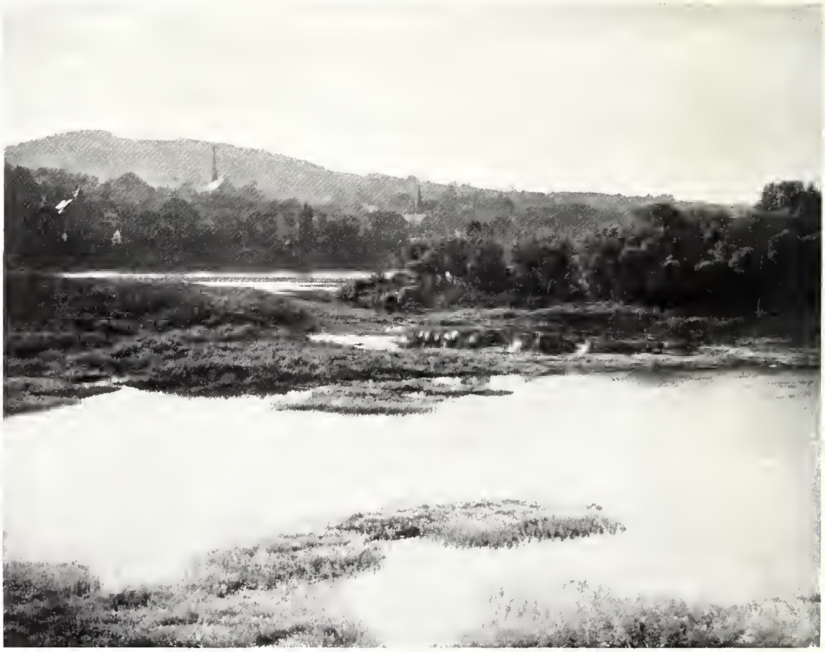
While the principal idea in photographing the line of the Pennsylvania Railroad, as well as the Lehigh Valley Railroad, was scenery (the latter styling itself the Switzerland of America), yet there were many other uses for the photographer, such as photographing the standard equipment of a road like the Pennsylvania, which included locomotives, cars, floats, ferries — in fact, every unit was to be considered which came under the Chief of Motive Power.

The Engineer of the road was also interested to have his newest bridges, either of stone or iron, reproduced, and one of the most remarkable bridges of the world to-day is the stone bridge across the Susquehanna River at Rockville, which is 3,830 feet in length, 52 feet in width (four tracks), 48 arches, and 440,000,000 pounds of stone. This bridge, with its artistic surround-



THE BAGGAGE AND DARKROOM END OF A PENNSYLVANIA CAR





THE SUSQUEHANNA AT FALLS, PA.
EVENING ACROSS THE RIVER AT TOWANDA, PA.
WILLIAM H. RAU

ings, made a rather picturesque effect, and was used largely by the road for advertising.

In every great event that took place in connection with the history of Pennsylvania, whether a pageant or an exposition, the Pennsylvania Railroad Company was always ready to join and help. We now have a representative set of plates of the Pennsylvania line, and with the exception of the straightening out of certain tracks and the addition of more tracks new pictures are not often desired, and copies from the original negatives continue to be used.

In many instances the Pennsylvania Railroad Company does not put titles on any of the railroad-pictures, which allowed these pictures to be used in many fine hotels, in their parlors, from which they would otherwise be barred by advertising, and the old idea of printing the title and the name of the road in large letters with blue ink was discontinued, and neat, plain hand-titles were used entirely when used at all.

Through the efforts of Mr. Chas. S. Lee, who was General Passenger Agent of the Lehigh Valley Railroad Company, I became official photographer of that road years ago, and had a well-equipped photographic car, with darkroom, water-tanks, developing-facilities and living-room — every convenience, excepting a cook. I covered this road very successfully in one summer, beginning my work at Easton, and ending at Niagara Falls. This road passes through some of the finest scenery of Pennsylvania and New York, is double-tracked and has modern equipment. I again went over this road a few years ago with a private car, of which we used one of the private rooms as a darkroom for doing any developing. This time I made only 8 x 10 plates, and panoramas from 4 feet to 10 feet in length, and we make enlargements from the former to any size, mostly 18 x 22. The Lehigh Valley Railroad Company uses a neatly printed card-mount of gray that tones well with the color of the print. On this trip I used Isochromatic plates, and recommend them to any one who has not given them a fair trial.

Although the railroads are gradually getting their official photographers to do local work, such as the photographing of construction-work in the engineering-department and the scenes of accidents, road-crossings and other important matters that require accurate legal knowledge, yet there is always an opportunity for a thoroughly equipped photographic establishment to acquire business from a railroad, especially if it can be done quickly, as a railroad never stops day or night, and the company does not consider hours when it wants a thing done. It must be done promptly and in a first-class manner.

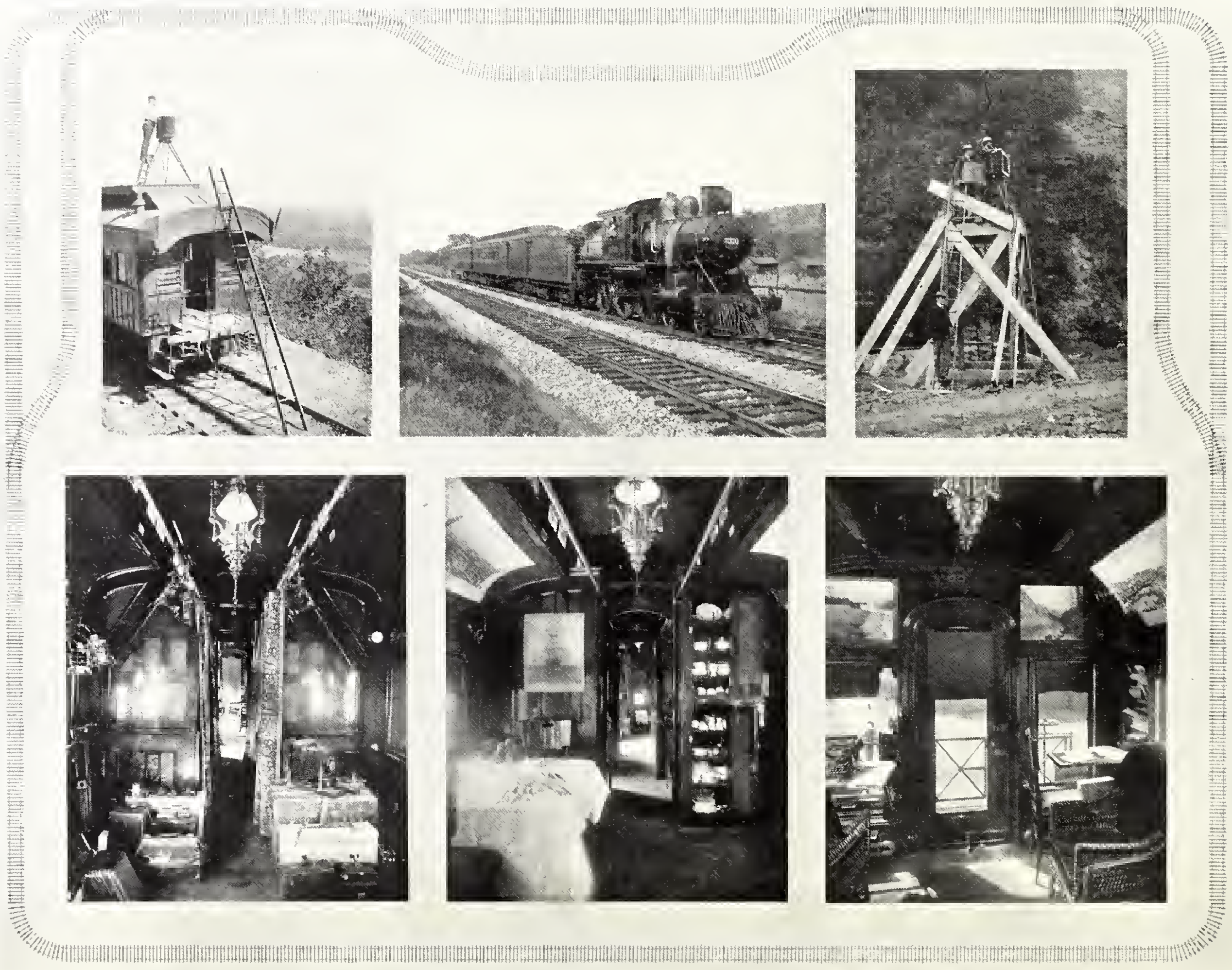
* * *

Few had the habit of reading before the printing-press was invented; and yet there were many great men before the day of the printing-press! If from this you conclude that you can become great without the reading-habit as easily as with it, then you are in error.

Those who achieved greatness before the day of the printing-press did not live in the age of print. You do, and so do all your rivals. The men who expressed great thoughts and did notable deeds before the days of print lived up to the fulness of their times. They used in winning to their greatness every tool to which they could lay their hands. The sword and the spear, armor, fire, all the wisdom of their fellows and all the wisdom stored in manuscripts,— of all these they grasped the best and used it as their genius directed. The same custom holds to-day. Your competitors, the best of them, have found that the cunning of your common calling has been put in print, and this they seize and use as best they can. While you ask if there can be anything in books for a man of your talents, your rival has found in print what suits his talents, and his needs as well, and has used it and has won.

John Cotton Dana.

THE PENNSYLVANIA BRIDGE OVER THE SUSQUEHANNA RIVER AT ROCKVILLE, PA.



SOME OF THE WAYS AND MEANS OF RAILROAD-PHOTOGRAPHY

Improved Anaglyphs

F. H. EIJDMAN, JR., AND G. O. 'T HOOFT

STEREOSCOPIC pictures are generally more animated and distinct than ordinary photographs, and even pictures that when viewed singly appear utterly uninteresting when seen stereoscopically assume a much greater meaning. The increased clearness and more correct understanding of the pictured object make the use of stereo-photographs highly desirable for educational purposes. But a stereoscope is necessary to view these photographs, and the ordinary stereo-pictures are not suitable for projection, hence any means for making these pictures adaptable for demonstrations before a number of persons at one time is of importance to science.

A very elegant and effective method of doing this is by the use of anaglyphs. A brief description of the principles of this method will be given here for the benefit of those who may not be acquainted with it. While ordinary stereoscopic pictures are placed side by side in pairs, and the right-hand picture viewed with the right eye and the left one with the left eye, with anaglyphs the pictures are printed one over the other in complementary colors, and these are viewed through a pair of glasses of the same complementary colors.

If the right-hand picture is colored green and it is viewed through a red glass the picture will appear to be black; if the same picture is looked at through a green glass nothing will be seen. The matter thus becomes very simple: the right-hand picture is colored green and the left-hand one red, and these are viewed through a pair of spectacles whose right-hand glass is red and the left-hand one green. The right eye then sees the right-hand picture and the left eye the left-hand one, both as black, while the opposite pictures are invisible — at least, when everything is in proper order, which is not always the case.

Making the Colored Pictures

Heretofore there have been two principal ways of doing this: the pinatype and the pigment methods. The pinatype was invented by C. Cros, and called by him "hydrotypy;" but Ducos du Hauron was the first to apply it to stereo-projection. For this purpose a gelatine coating (a lantern-slide plate fixed before exposing) is sensitized in a three-percent solution of potassium bichromate and afterwards exposed under a *positive*. It is then washed till all the bichromate is removed. Where the plate has been acted upon by the light the bichromate is reduced, and as a consequence the gelatine is tanned according to the degree of exposure, the darker portions remaining untanned. If the bichromate is now washed away these darker portions will show in relief, because the untanned gelatine absorbs more water than the tanned parts and therefore swells up. This becomes plainly visible if the plate is dried after washing and again moistened. If the plate be now immersed in a coloring-solution suitable for the purpose, the swelled portion of the gelatine becomes colored by preference (the more it is swelled the more color it will absorb), but the tanned portion scarcely at all. In this way a colored positive is obtained from a positive lantern-plate.

For the pigment method a gelatine coating is also used (an unfixed flat filmpack-film is very good), and after sensitizing in ammonium chromate and drying it is printed on the *back* side under a negative. In this case also the exposed portions of the gelatine are tanned, but this is now used in a different way. The untanned gelatine is washed away with warm water aided by a soft brush, so that only the exposed parts remain. The film is now fixed, rinsed and dried. On the unexposed parts — that is, the highlights, since a negative was used — there is nothing but the celluloid; in the dark parts all the gelatine remains; in the halftones there is a thin layer of gelatine. Owing to the granular nature of the silver bromide in the coating the halftones come out very finely. So we have a gelatine positive on a celluloid support; this positive is now to be colored with a suitable dye.

What is Required of the Pictures

First, clearness and fineness of details. In whatever way the pictures are made they must be perfectly clear, and there must be no coloring on parts where it does not belong, as in the *white* portions, and the details must be distinct. In the pinatype the details are particularly fine as a rule, and for that reason a diapositive is often made first and the pinatype printed from this. The pigment prints are often much harder. On the other hand the gelatine in the pinatype is apt to hold the color in the whites, so that if two pinatypes are used a strong fogging is likely to appear. This cannot occur in the pigment method, since there is no gelatine in the whites. A very satisfactory way is to make one picture a pinatype and the other a pigment. If, however, clearness is the chief point, then two pigment pictures are recommended.

Secondly, the colors used must be complementary. Since the red picture must be looked at through a green and the green one through a red glass, both should appear black. That is, all the light that passes through the red should be absorbed by the green. This requirement, however, cannot be fully realized; but it can be done better than sometimes occurs in practice, when instead of black a dark blue or violet is obtained. In truth, we are far from being able to get ideal red or green, as it is practically unobtainable. The coloring-materials used by us, however, are satisfactory in practice, since even the halftones, when seen through the complementary glasses, look gray and do not show decided colors. The question is asked, Where can one find suitable coloring-materials? A green is required that will color the gelatine as strongly as possible and absorb the red while reaching the yellow as far as may be; but the color-impression is of no importance—absorption is the chief point to be considered. We use Kiton green N (J).

We have not been able to find a simple red that will color the gelatine and allow no blue to pass through, and that is an important desideratum, since if the red allows blue to pass the picture will be bluish instead of black, which is somewhat unpleasant when viewing the pictures. To avoid this, we now combine yellow with the red (Guinea standard red 2 R [A] and Guinea standard yellow RL [A]). The three colors used by us are also very permanent, which is important, as when projecting the anaglyphs they are exposed to the brilliant light of the lantern for a considerable time.

Among the colorants that fulfil the optical requirements, there are many that cannot be used because they fail to color the gelatine properly. As the gelatine will not bear heating — even when tanned it will not stand moderate heat — it must be colored while cold, and in that case several of them lack sufficient intensity. The color should also be capable of drying gradually, and it must not color the celluloid. This latter quality is possessed by most reds and yellows. In the greens there are several that respond to this requirement only moderately, and these, of course, must be avoided.

It has been mentioned, in passing, that when a red picture is viewed through a red glass nothing is seen. The red is then said to be neutralized by the glass. This, of course, cannot be completely effected either. The spectacle-glasses should be much more strongly colored than the anaglyphs. Most glasses are too weak.

Mounting

In mounting landscapes it is advisable to arrange the pictures so that two points in the foreground will fall nearly over each other. This produces an effect as if the view were seen from a window. If two points in the background are allowed to fall together, an impression is given as if the picture sprang forwards from the frame. This is very effective in flower-pieces in which the flowers and branches stand well out to the front. In all cases, when mounting, care must be taken that the greatest separation of the lines of the two pictures does not exceed three sixteenths of an inch. If the separation exceeds this, it is difficult to get them to coalesce.

An important factor for the easy coalescing of the pictures is the angle at which the projected picture is viewed. Practically, the coalescing is not at all difficult if the pictures are viewed at the same angle as that at which they were taken — at least if they are correctly mounted, so that the points in the foreground cover each other somewhat nearly. If one approaches the screen too closely, the blending becomes more difficult, and finally impossible. On going farther away, the constantly reducing angle of vision produces no noticeable effect, and some persons think that up to a certain point it rather gains than loses.

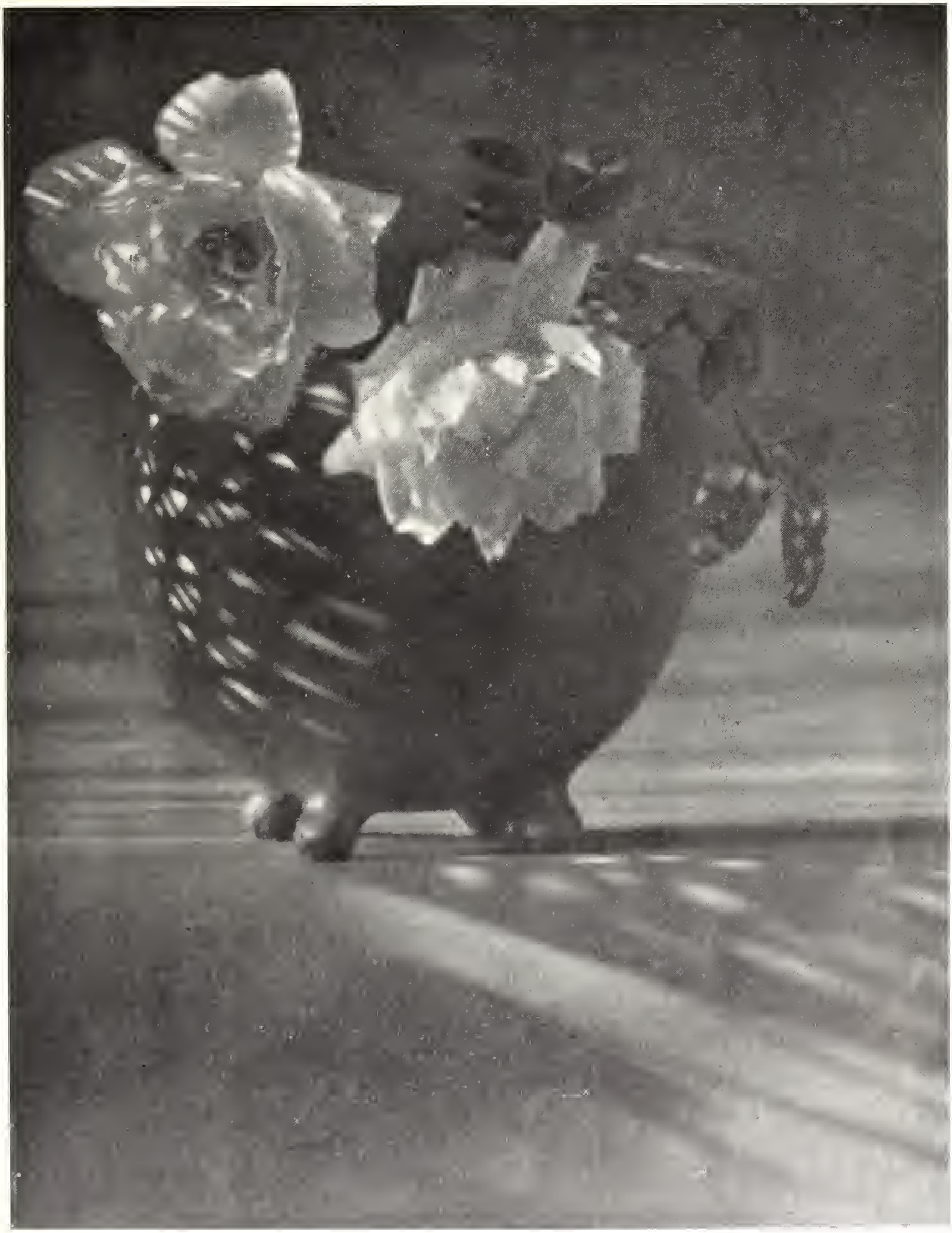
Summary of the Process

To prepare the pinatype picture, fix out an unused lantern-slide plate, wash and immerse in a three-percent solution of ammonium chromate, removing the superfluous liquid with blotting-paper; dry in the dark. Print under a *positive*, and wash until all color disappears. For coloring, see below.

To prepare the pigment picture, use a pack-film or Kodak portrait-film, unfixed and sensitized as above. This is printed through the back under a negative in a printing-frame which is placed at the bottom of a box about fifteen inches deep, and large enough to receive the frame. The open end of the box is pointed to the clear sky, and the film exposed for ten minutes. The film is then placed in a tray with water heated to 95° or 100° F. and the untanned gelatine is carefully washed away. One can easily judge by the silver bromide in the film whether the white portions are perfectly clear. Fix in hypo, wash and dry.

To color the pinatype picture green, the dry pinatype plate is placed for one minute in a one-percent solution of Kiton green and the superfluous water blotted off.

To make the green glass for the spectacles, make a solution of 1 part Kiton green in 1,000 parts of water. Then make up the following solution:



KILLARNEY ROSES
THIRD PRIZE — SUBJECT FOR PHOTO-ERA COVER
FANNIE T. CASSIDY

FLOATING MYSTERIES H. C. MANN

Kiton green solution	1 ounce
Water	2¼ ounces
Dilute sulphuric acid	20 drops

To make the dilute sulphuric acid, mix 2 ounces of concentrated acid in 1 pint of water, stirring constantly.

Immerse a piece of film large enough to make a spectacle-glass in this coloring-solution until it is quite strongly colored; then wash in clean water and dry quickly.

To make the red glass, dissolve 1 gram of Guinea standard yellow RL in 1 liter of water. Make the following mixture, and bathe a piece of film in it until strongly colored:

Red solution	20 ccs.	(5½ drams)
Yellow solution	20 ccs.	(5½ drams)
Water	60 ccs.	(17 drams)
Dilute sulphuric acid	10 drops	(10 drops)

Rinse, and dry quickly. If the spectacle-glasses are well made, they will both allow a little yellowish gray light to pass through. If the light is reddish, the green film is not colored sufficiently, and must be dipped again in a new bath; if the color inclines to green, then the red film must be strengthened.

To make a green-pigment picture, color it in the above green solution until it is well neutralized when examined through the green spectacle-glass and looks black through the red glass. To make the red-pigment picture, bathe the film in the red solution until it is neutralized when examined through the red glass and also looks black through the green glass. If, in order to be thoroughly neutralized, the pictures must be so weak that they appear gray when seen through the complementary glasses, then the latter are too weak and must be strengthened by placing them again in the coloring-baths. If, on the other hand, the glasses need to be reduced in strength, take 3 ounces of water and add to it 1 drop of ammonia (if the color is very strong, take two drops). Wash in this till the color is sufficiently reduced, and then rinse in clean water, following it with water containing a couple of drops of sulphuric acid; then rinse again in clean water, blot off and dry.

Should it be desirable to remove the color entirely, use 5 drops of ammonia in 3 ounces of water, adding more till the color entirely disappears.—*Abridged from an article in "Lux," of Amsterdam, Holland.*

Prize-Pictures

WILLIAM LUDLUM, JR.

WHAT is a prize-picture? If a picture is a prize-picture, why is it a prize-picture? Where does the prize-part of it come in?

These are questions that many amateurs are continually asking themselves, at the same time wondering why their pictures never seem to break into the prize-class. Most prints submitted in monthly competitions, like the proverbial cat, "come back;" but, as in the cereal advertisement, "there 's a reason," and the reason is that no picture will ever be a prize-winner, in the true sense of the word, unless it is made up of prize-material. Just how to judge this class of picture-material is difficult, unless one has a thorough knowledge of the "know how" of its make-up; and even then, self-criticism, or the ability to select from one's own prints, is not to be relied upon any more than a doctor will rely upon his own diagnosis of his own complaint. Where there is any pull of self-interest, judgment is apt to be clouded and lean towards the point of least resistance; in other words, you judge as you wish to be judged, and then — just here is where the unthinking praise of relatives or friends steps in to complete the mischief. The formula is about as follows:

You make a print, and you have a notion that it is a pretty good one — not quite in the prize-class, but still, it is so good that, maybe, after all — and then you pass it around for your family to examine, and, at once, the print springs into the lime-light as a "winner." It leaps beyond the reach of your personal judgment to shine in the friendly atmosphere of family praise. You really don't see the picture at all, only its glorification in adjectives by those who don't know a picture from a pop-gun. They mean well, and you as well; and then, while your head is seven sizes too large for your hat, you wrap up the picture and send it, post-haste, to the leading photographic journal, expecting to receive the prize-money by return-mail. When, in course of time, it comes home to "roost," without even an honorable mention attached to it, you wonder what kind of a dunderhead editor had the prize-awards in charge, and you remark, sarcastically, to yourself, "I might have known that the editor had his own special circle of friends to whom he hands out all prizes, regardless of merit. What chance will he ever give me?" When you receive the number of the magazine containing the pictures selected for awards in the particular contest in which you entered your print, you are already predisposed to condemn the prize-winners, and, no matter how good they are, viewed through the green spectacles of envy, they appear to you as so much photographic trash, and your friends, of the "pop-gun" judgment, are only too willing to back you up. You at once develop a grouch and a kick, and will continue a grouch until the end of your days unless you utilize your kicking-propensity to kick yourself out of the rut, instead of knocking at the finished judgment of those who "know" a prize-picture when they see one.

To succeed in producing a prize-picture requires more than self-interest or family-praise. The whole secret of the matter lies in making a thorough study of good pictures, pictures that are true to the principles of art, that is, by comparison. Compare your prints with those that are prize-winners, and try to see wherein the difference lies. Familiarize yourself with the few fixed rules of artistic expression, spacing, proportion, tone, lighting and point of interest, and you will soon realize the shortcomings of your pictures. Yours fail through violation of one or more of these fixed principals, whereas the others win by a strict adherence to all; no "dunderhead" editor has anything to do with it. When you have learned to judge a picture as a pure expression of artistic sentiment and principle, not as a mere photograph, sinking all personal interest in the matter, you will begin to turn out a few prizes, and, in the end, come to realize that the editor, after all, is your best friend. He knows — and he knows that you should know — and you should know that he knows you should know, and — that 's all there is to it.

* * *

THE question of values is one of the most abstruse which the artist has to encounter, and is of special importance to the photographer, whose work, lacking the element of color, depends for its effect largely on relative values. Line, of course, is important, as it must be to any worker in monochrome; but the technical methods employed by the photographer inherently are capable of rendering the values of nature more perfectly than any other medium, and the photographer has the power to modify them to as great extent as the worker in any other process.— PAUL LEWIS ANDERSON, in *Pictorial Landscape-Photography*.

LAKE ODESSA, ESTES PARK, COLO.

An Amateur's Comment

HAROLD LOEB

I AM glad I do not know everything there is to be known about photography; once in a while a blind man finds a horseshoe, 't is said. While I lay no claim to perfection in my own particular sphere, I have often wondered if a few general observations by an amateur, though possibly not new or unobserved by others, might not be provocative of thought among those who are so far advanced that they must take many things for granted which do not exist in fact.

Having made my excuse for the following rambling observations, I wish to speak first of the focal length of lenses. The standard lens-equipment of practically every film-camera made in America is of too short focus. The angle of view embraced by the popular quarter-plate or postcard-camera is too wide for pleasing landscapes, and is certainly too great for heads or figure-studies. Why the manufacturers do not supply longer-focus lenses I do not know, unless it is because of the increased expense which additional bellows-length and lens-size would entail.

Coming next to the soft-focus lens, this invention, it seems to me, is not being accorded its rightful measure of publicity by professional photographers. In my city I know of only one worker who uses the semi-achromat — a woman — and she does not advertise the fact that her photographs are "different" and superior, as they undoubtedly are.

While I have the hardihood to speak of professional picture-makers and publicity, may I suggest the inestimable advantage which would accrue to the craft from settling, once and for all, the ethics of advertising or not advertising? One photographer here advertises in the street-cars; I have never seen public announcements by any others. I venture to assert that he who courts trade, while others refrain, possibly from feelings of impropriety, gets more orders than the actual quality of his productions merits.

The postcard-studios in many of the larger cities are undoubtedly a hindrance to more serious workers; not because they are cheap and progressive — competition is indeed the life of trade — but because of the unscrupulousness in many instances of their proprietors. To make a charge for ensuring the picture against fading, and then to spray it under the eyes of the duped customer with pure water; to fix prints carelessly and insufficiently; to demand payment in advance and then force the victim to accept what is frequently absolutely worthless work; to make so-called "drapes" for high pay secretly and

PANORAMIC VIEW BY F. W. BYERLY

illegally — all militate against the art of photography.

It is said that the quality of photographic reproductions in newspapers is far below what it could and should be. To prove this assertion, it is necessary only to compare the "cuts" accompanying the reading-matter of national advertisers with the local "art" of the paper. Why this is the case I do not know; one would think that the dailies would certainly awaken to their own shortcomings in this respect.

Turning to the subject of motion-pictures, I prophesy that the "movies" will never be as popular in the home as their humble relative, the stereopticon, until the films become more available to private individuals. A school in Cincinnati recently traded its motion-picture camera for a stereopticon, because a loan-collection of three thousand slides was available at the Public Library, and good films to show the children could not be procured. Trashy fiction predominates; educational films, such as travel-scenes, manufacturing processes and agricultural pursuits, seem to be completely in the discard.

In concluding this item, which seemed of its own accord to turn out more of a tirade than a "boost," let me point out the lack of good enlarging-lanterns to be had at reasonable prices in this country. In any of the British publications, lanterns will be seen advertised at about the equivalent of $15 in our money which possess all the qualifications and adjustments of American machines that sell for upwards of $50. Cost of manufacture may be lower in England than here; but why are there no agents in the United States from whom the public might reap the benefits of such conditions, the dealer incidentally enriching himself?

Get busy, some of you men who believe in making a legitimate profit out of legitimate progress!

❧

If you accept art, it must be part of your daily lives, and the daily life of every man. It will be with us wherever we go, in the ancient city full of traditions of past time; in the newly cleared farm in America or the colonies, where no man has dwelt for traditions to gather around him; in the quiet countryside as in the busy town, no place shall be without it. You will have it with you in your sorrow as in your joy, in your work-a-day hours as in your leisure. It will be no respecter of persons, but be shared by gentle and simple, learned and unlearned, and be as a language that all can understand. It will not hinder any work that is necessary to the life of man at the best, but it will destroy all degrading toil, all enervating luxury, all foppish frivolity. It will be the deadly foe of ignorance, dishonesty and tyranny, and will foster good-will, fair dealing and confidence between man and man. It will teach you to respect the highest intellect with a manly reverence, but not to despise any man who does not pretend to be what he is not.

William Morris.

Photographic Apparatus Employed by German Airmen

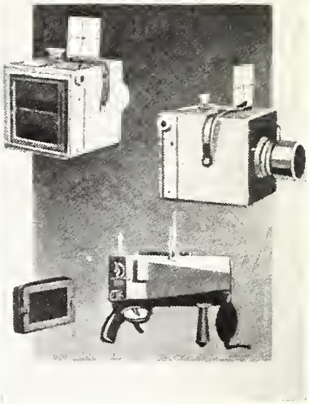
THAT the part played by aërial photography is of prime importance in modern warfare has been amply proved during the past seventeen months of the European conflict. Not only do photographs taken from aircraft serve to some extent as an index of the strength and disposition of an enemy's forces, artillery and defenses, but it is also of extreme importance in the determination of artillery-range.

Although details regarding the photographic apparatus employed by Allied airmen have not yet been made public, those pertaining to two types of cameras used by the Germans are available. The first of these was found on board the Zeppelin No. VIII, which was brought down and captured at Badonvillers, France, on the twenty-second of August, 1914, while the second was carried by an Aviatic aëroplane which recently fell within the lines of the Allies.

The camera carried by the Zeppelin consists simply of a metallic case measuring 16 by 16 cm., fitted with a curtain-shutter that can be operated at various speeds, according to the intensity of the light and the opening of the lens. A Zeiss Tessar lens is employed with a useful opening of F/4.5 and a focal distance of 30 cm. The lens is fitted with a sun-guard in order that clear views may be taken against the light. Double rear-doors are provided at the back of the camera for the insertion of plates. The field of vision of the apparatus is determined by a direct-view finder. Incorporated in the camera is an arrangement which permits the placing of a screen-filter between the plate and the lens when orthochromatic emulsions are used on the negative plates.

This form of photographic apparatus has no absolutely novel features. Because of the great heights at which the Zeppelins are compelled to fly during daylight in order to avoid hostile artillery-fire, it is not believed that a camera of this kind is often employed.

Of far greater interest is the photographic apparatus that was found on the Aviatic aëroplane and which presents a number of innovations. It appears to be the model used on all heavier-than-air German aircraft, and its dimensions are 9 by 12 cm. The body is of metal, covered with a waterproof fabric. The Zeiss Tessar lens with which the camera is provided has a focal length of 25 cm. and a useful opening of F/3.5. Inside the camera, between the lens and the negative plate, are alternately placed a yellow compensating-screen for the use of orthochromatic plates, or, if plates with ordinary emulsion are used, a similar incolorous screen, which, under the identical conditions, rectifies the modification of the focal distance resulting from interposing screens. Both the screens are manipulated by a lever placed outside. The finder consists of two members: The first, placed at the front, a slide-arrangement with a center-mark, while the rear member is a smaller folding frame with a sighting-groove. The shutter is of the focal-plane type, with the speed and opening adjustable on the outside. Exposures may be made with the shutter of from $\frac{1}{50}$ to $\frac{1}{800}$ second; a lever and dial fitted on the apparatus permitting the selection of any speed desired. Six sensitive plates are carried in an interchangeable holder. The shutter is operated by a trigger, similar to that employed on firearms — in fact, the entire camera has the appearance of a revolver. It is held by a form of revolver-handle to facilitate pointing in any direction, and another handle is provided farther front should the rear one not be as satisfactory for certain positions. By a very clever arrangement, the trigger operates two halves of a curtain, which opens at the snapping of the shutter and closes the moment the exposure is finished, thus permitting the recocking of the shutter, whose movement would otherwise expose the plate which the holder has just put into position for the next exposure.



Scientific American.

* * *

REPUTATIONS are easily acquired, but not easily made lasting.—*Alfred Stevens.*

THE CURLING WAVE H. L. BRADLEY

Pyro for Prints

R. CHILD BAYLEY

FROM the very beginning of the war the supply of photographic developers has been seriously affected. Prices have mounted upwards until the latest quotations for some of them have indicated that there is practically no more available. Pyro is to some extent an exception, and is now by far the cheapest developer obtainable.

It has been customary to consider pyro as a developer suitable enough for negative-making, but altogether unfitted for the development of bromide and gaslight papers. It is true that formulæ for its use have been published both in these columns and elsewhere; but the pyro-developed print has been more or less of a curiosity, and it is safe to say that not one piece of paper in ten thousand has been developed with it, unless for negative-purposes.

The Stain-Image

The reason for this lies in the fact that in the case of images developed with pyro there is always, in addition to the silver image, an image composed of the product of oxidized pyro, a stain-image; and this blending with the plain black of the silver gives the print a rusty color, or at least one that is not black. There has also been the feeling that staining is very easy with pyro; and so it seems to have been taken pretty well for granted that for prints this developer was unsuitable.

The staining of the whites of the paper must be regarded as quite distinct from what I have called the "stain-image." The latter is a real image, deepest in the darkest parts, and in the highest lights of all quite invisible. If we take a negative or a print that has been developed with pyro, and put it in some solution which will dissolve out the whole of the silver, as, for example, the ferricyanide and hypo reducer, when all the silver has been removed the picture is still there. If it was a very brown image originally, it may even be dense enough still to give a good print; in fact, there have been cases of exceedingly vigorous negatives to which this treatment has been applied to reduce them to get a soft picture.

It occurred to me, as it has no doubt occurred to many others, that in the case of bromide or gaslight prints which are to be sulphide toned the presence of a little stain-image might be disregarded altogether. It may interfere with the getting of a perfectly pure black, but it is sufficiently near in color to the sepia of the toned print for its presence to be quite immaterial. In view of the possibility of still greater difficulty in getting the so-called non-staining developers, it is well to see how far we can manage with pyro, an agent of which a serious shortage is unlikely. A series of experiments were made, therefore, to find out the most suitable formulæ for pyro developers for prints, and to ascertain how far their use was practical.

It should be pointed out here that, apart from this "stain-image," pyro should not be regarded as a staining developer at all. If we use with it the profusion of sulphite which is usual with metol and similar agents, pyro does not stain. The experiments to be described confirmed this amply, print after print being developed in the same small quantity of solution, the unexposed edges of the pictures remaining perfectly white.

There is no need to recapitulate all the trials that were made; the results will be what the reader will want to know. These can be expressed briefly by saying that it was found possible to make bromide prints with pyro-soda which experts could not distinguish, in the untoned condition, from good prints on the same paper developed with the ordinary metol-hydroquinone or amidol, and that these prints toned in a manner absolutely normal.

On gaslight paper the toned prints were indistinguishable from those obtained by metol-hydroquinone; but, in this case, the color of the untoned print was not black, but greenish-black or brownish-black. In some cases the gaslight prints developed with pyro had an extremely pleasant brown color without toning.

Stock-Solutions Required

The pyro stock-solution used was the ordinary ten-percent formula which I use in negative-work. Fifty grains of potassium metabisulphite were dissolved in four or five ounces of water, and a couple of drops of hydrochloric acid added to make the liquid smell strongly of sulphurous acid. An ounce of pyro was dissolved in this, and the mixture diluted to make nine ounces and one dram. Whenever a grain of pyro is referred to below it should be understood that ten minims of this stock-solution is meant. The water used in making it up was water which had been briskly boiled and allowed to go cold without agitation. The solution at the time of writing has been made up two or three weeks, and is of a bright, clear yellow color.

With this pyro stock-solution, the alkali employed consisted of a pound of sodium sulphite crystals and a pound of sodium carbonate crystals dissolved in hot water and diluted to make eighty ounces in all. A ten-percent solution of potassium bromide was required in some cases. The fixing-bath consisted of two ounces of hypo and a quarter of an ounce of potassium metabisulphite in one ounce of water.

Successful Results on Bromide Paper

Bromide paper can be developed with this to yield pure black-and-white prints, as already stated. The paper employed was Wellington platino-matte; and after a number of trials it was found that a solution made up of equal parts of the stock carbonate-sulphite solution and water, to each ounce of which mixture one grain of pyro was added, made the best working-strength. No bromide whatever proved necessary, the unexposed parts keeping perfectly free from veil, even when the development was prolonged. The prints after development were rinsed for a moment in plain water and were then fixed.

It will be noticed that this developing-solution not only uses the cheapest developing-agent, but is also much less strong in it than is customary. The Wellington formulæ may be taken as typical in this respect; and it will be seen that their amidol formula is arranged so as to contain two and a half grains of that substance in each ounce of the solution as applied to the paper, while in the metol-hydroquinone formula we have two and a half grains of metol and three quarters of a grain of hydroquinone per ounce.

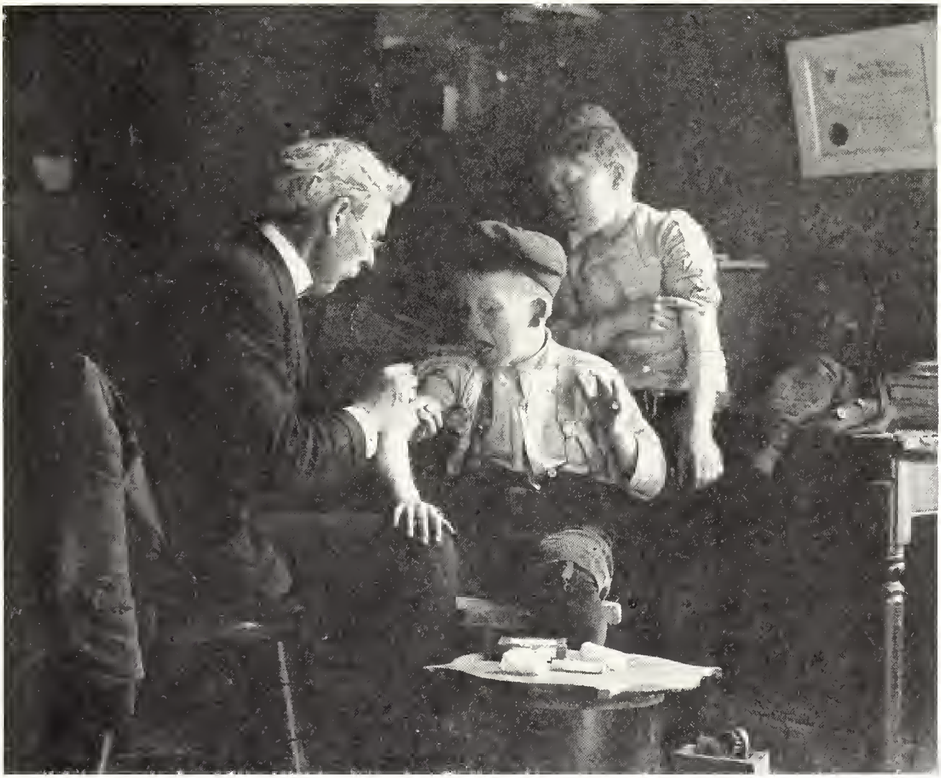
Repeated Use of the Solution

There was a marked difference between, say, the usual amidol developer and this pyro solution in use. Amidol, as most of my readers know, can be used over again several times, the action gradually getting slower and the color of the prints more greenish. With a pyro developer, made as just described, there is not much alteration in color, but the action speedily slows down. Four ounces of solution were made up and whole-plate prints developed, pouring the whole four ounces into the dish each time. The first print was developed in three minutes, the second in a little over four, the third took eight minutes, and the fourth, at the end of half an hour, was still unfinished. Apparently the developer was exhausted, so the print was rinsed and developed up to full depth by applying some fresh solution.

Those who have been deterred from using pyro for prints because of its reputation for staining will be interested to learn that this last print was as free from stain as its predecessors. It was a little less vigorous and slightly greener in color, but now that it is toned there is little or nothing to distinguish it from the others. The developer at the finish was only slightly discolored.

Gaslight Paper and Pyro

Having succeeded so well with bromide paper, it was natural to try the same developer on the gaslight kind; but it was evident from the outset that it would not do. Velox was the paper used, both "special" and "vigorous" being employed. Pyro-soda without bromide fogs the paper hopelessly, and it became necessary to find out what proportion of bromide and of the other ingredients would give the best result. After a number of trials the most suitable developer for the "vigorous" Velox proved to be one consisting of the stock-solution of sulphite and carbonate above described, to each ounce of which five minims of a ten-percent bromide solution and stock-solution representing two grains of pyro were added.



"THE DREAD AND FEAR OF KINGS"

Copyright, 1908, H. B. Conyers

H. B. CONYERS

No dilution is advisable in the case of the "vigorous" Velox. "Special" Velox can be developed with the sulphite-carbonate solution diluted with its own bulk of water; but even in this case the full strength seems preferable.

Although such a developer is very rapid, it is not so rapid as the metol-hydroquinone generally employed, development taking a little over two minutes to complete. The image very quickly makes its appearance all over, and then the image of full density is gradually built up. As already mentioned, the developer does not give a pure black, but a brownish black, which, however, tones to a fine color.

The absence of staining which was conspicuous all through the series shows that when pyro is given a fair chance — that is to say, when sufficient sulphite is present and the developer is not a stale one — this trouble is only a bugbear. Of course, if a developer were used which soon became quite black, such as is sometimes the case in negative-work, the paper would be almost certain to lose its whiteness, and it is doubtful whether any clearing-solution that could subsequently be applied would restore it, so that such a form is inadvisable; though, even then, it is likely that in a mild case a sulphide-toned print would not be much the worse for the coloration, since it is recognized that a toned paper is better than one which is quite white for this process. Still, this is not sufficiently controllable to justify advocating it; and those who use pyro for prints will no doubt take the proper steps to avoid staining altogether. It is easily done, as has been shown.

Two Interesting Lines for Experiment

The development of gaslight papers with pyro offers a very interesting field for experiment. There are two lines which may be followed up. One is to find a formula which will give pure black-and-white prints, such as can be got, for example, with amidol. I think it likely that this is possible. The other, which is certainly possible, is to formulate definitely the method for getting sepia and other brown tones with pyro by direct development. Those of my readers who find experimental photography interesting will do well to give this their consideration.

Photography and Focus.

How a Tripod-Socket Helps to Tell the Truth

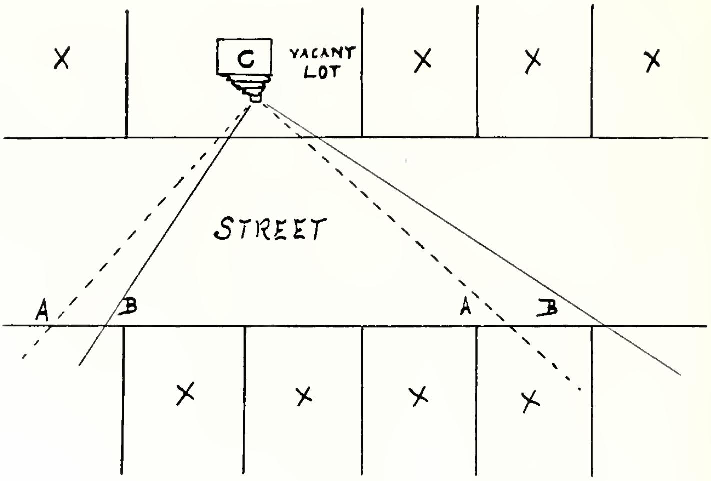
MILTON M. BITTER

YOUR folding camera is supposed to be up to date. It has a rising, falling and sliding front, a swing-bed and a reversible, detachable back, but it has no tripod-socket on the side, hence you have a *vertical* swing but not a *side* (horizontal) swing. With a tripod-socket on the side you would have *both*, and thus your folding camera (if having a long bellows) would do anything that a view-camera with double swing would do, except swing both ways at the same time, besides being much lighter to carry and far more convenient to handle and more quickly set up.

"But," you say, "with a sliding front I would rarely have use for a side swing." Yes, perhaps; but it is in the rare instances that one needs all possible resources.

The invaluable aid of a side-socket can be shown best by a practical illustration. You wish to photograph a row of four brick houses and picture all of the houses as nearly of the same size as possible. Across the street, *opposite one of the end houses* in the row, is a vacant lot with houses on both sides of the lot, thus making the vacant lot the only available spot from which to make the exposure without getting an exaggerated perspective; for if you place the camera *in* the street and point *up* the street, the horizontal lines of the houses will converge unnaturally just as the perpendicular lines of a tall building will converge if you point the camera *upward* in photographing it.

Let us then lay down the principle that the ground-glass (focusing-screen) should be parallel with the houses if you wish truthful perspective, just as it should be parallel with a high building to avoid making perpendicular lines converge. Now, in your position in the vacant lot (because the adjoining buildings will not permit you to place the camera opposite the center house in the row), you find that you cannot get the farthest houses on the ground-glass, so you slide the lens toward the farthest house, and that helps a little; but you have not yet included them all. There seems to be nothing else to do but turn the entire camera slightly and point *up* the street; but bear in mind that *the ground-glass must remain parallel* with the houses to get true perspective.



WHAT A TRIPOD-SOCKET ACCOMPLISHES

Now if you had a tripod-socket *on the side* of your camera you could mount the camera on its side, reverse the back to use the full length of the plate and then swing the lens toward the farthest house, the ground-glass still remaining parallel with the houses. This, of course, would necessitate some stopping down (using a smaller diaphragm in the lens) to sharpen the focus; but if you use the camera in the original position (with the back parallel to the houses and the lens moved out to the side, but with the camera mounted in the bottom socket) you would be using the *marginal rays* of the lens, which, if a rectilinear, would not give you sharp definition on the edges, hence stopping down would be essential, and of course it is always advisable with architectural subjects (if making merely "record" pictures) under normal light-conditions; besides, in the present instance it would be necessary anyway because of the unequal distances of the end houses from the camera.

The illustration shows the use of the camera for this view. C is the camera. The X's are houses. The dotted lines C A show approximately how much of the view you could include by sliding the lens out as far as you could safely use it, and with the camera mounted *in the bottom-socket.* The lines C B show the greater scope with the lens swung toward the farthest house and the camera mounted *in the side-socket* and the ground-glass still kept parallel with the houses.

You can readily think of other instances in which the side-socket would be quite as serviceable. Suppose you wished to take a photograph of a Christmas-tree with two little children on opposite sides of the tree. Because of obstructions in the room you have to place the camera at one side instead of directly in front. Do you see how the side-socket will come to your assistance? True enough, you could get a very satisfactory picture with your camera in the normal position; but by using it on the side and swinging the lens toward the farthest child you can get a more truthful portrayal of *the comparative sizes* of the children — in other words, better perspective. In this case the difference would be trifling, perhaps, but "trifles contribute toward perfection, and perfection is no trifle."

Again, imagine yourself photographing a parade, with the camera on the sidewalk and the lines of the parade extending from curb to curb. Set the camera with the *ground-glass parallel with the oncoming lines of "the marching host"* and swing the lens toward the farthest figure, then the men nearest the camera will not appear like giants compared with those on the other end of the line extending *across* the street. The disadvantage of this method of procedure, in this particular instance (moving objects), is that the stopping down necessary to equalize the focus will lessen the speed of the lens; but if you have good light this will not be serious.

I recently took a photograph of a long office-interior showing one side and the far end. I did not then have a camera with a side-socket. The photograph made that office appear about twice as long as it actually was. If I had had my camera mounted on the side, I would have turned it as much toward the long side of the office as possible and then used my swing-bed to point the lens toward the far end of the office. Since, in this case, I could not set my ground-glass wholly *parallel with the side* of the office, of course the perspective would have still been considerably exaggerated, using a short-focus lens, but not so much so as if I had not had the advantage of being able to point my lens as indicated through mounting my camera *on the side.*

You can readily understand, too, how in some phases of landscape-work the side-socket, in connection with the swing-bed, would help to preserve a truthful perspective and also help to equalize the focus.

A side-socket can be bought of your camera-maker for twenty-five cents, and any cabinet-maker will insert it for you or you can do it yourself. In ordering the socket be sure to state that you want it for the *side* of your camera, as the sides are generally made of thinner wood than the bottom; also give the name, size and model of your camera.

I wrote to the manufacturers of my own camera and received the following satisfactory reply:

"We have yours of the 28th ult. and have noted the contents very carefully. You are correct in the statements you make regarding the use of the 5 x 7 —— Camera, and this camera should have a tripod-socket on the side in order to get *the full use* of the swing-movement. We are sending you under separate cover one of our No. 21 tripod-sockets, and if you are near some shop that can attach the tripod-socket, possibly this will help you out. If you are unable to attach it properly, or if you do not care to undertake the work, you may send the camera to us and we will see that the tripod-socket is put in the side of the case. All that is required to attach the tripod-socket is to have the hole bored of the proper size and the socket inserted and screwed to the side of the case.

"Thanking you very much for calling our attention to this matter, we are,

Yours very truly."

In the foregoing I have referred only to cameras having a swing-bed, and directed you to swing the lens toward the farthest object, keeping the ground-glass parallel with the objects being photographed. To obtain the same results *with a swing-back,* follow the same procedure, i.e., *point* the lens toward the farthest object and *swing* the image of the farthest object away from it to make the ground-glass parallel. Then stop down to get the focus more nearly even.

Uphill- and Downhill-Perspective

WILLIAM S. DAVIS

We hear quite a good deal about perspective in general, and its rendering by the camera, but comparatively little regarding the effect of looking up or down from a given standpoint; and while the novice might think this impression would be readily conveyed without taking particular care in arranging the picture, such is by no means true.

To attempt full analysis of the various reasons for failure, or to give directions that would ensure success in unknown cases, is more than I can do; but a description of certain principles involved, together with their application, may assist.

In the first place one reason why failure sometimes occurs is the fact that an ordinary picture consists of an image upon a flat surface, while the normal individual has the advantage of seeing a subject in stereoscopic relief, thus conveying a full sense of separation between "planes" in all directions — up and down as well as from the immediate foreground to the extreme distance.

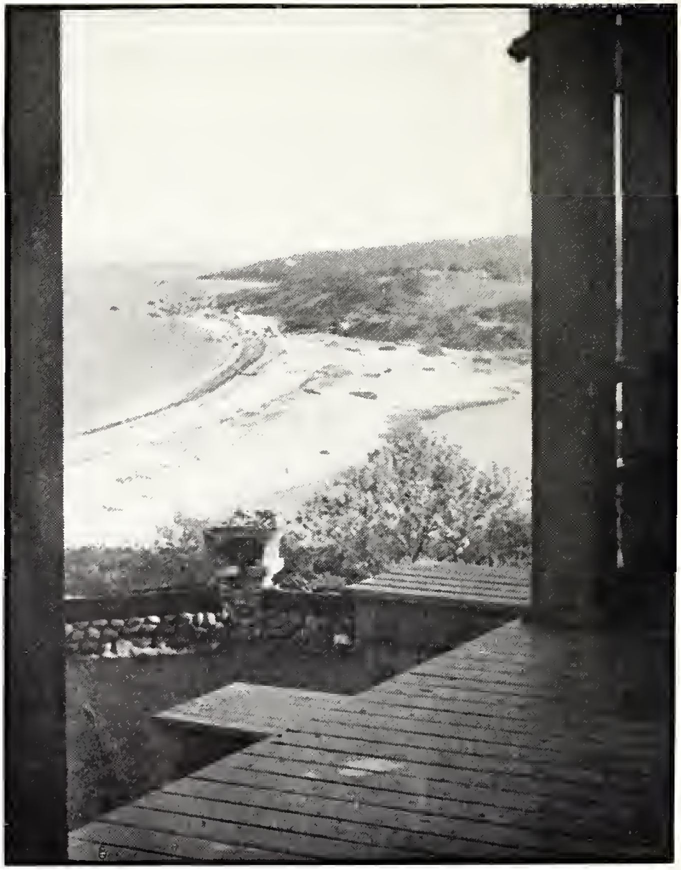
When viewing any scene the spectator is also enabled to look about and so obtain additional means of comparing the relative elevation of various parts. As a result a person can always tell whether he is looking up or down, even without especially prominent lines in the view to help the impression; but a picture can show only a limited amount of subject-matter, consequently, if there are no definite lines and tones included capable of expressing the feeling intended, the result must be disappointing.

To express upon a flat surface the effect of separation between parts at varying distances recourse is had to both linear and aërial perspective — the first of course conveying a sense of distance by the diminishing size of familiar objects or details, and the latter emphasizing the effect by a gradual decrease in clearness, flattening of contrast and prevailing lighter tone-values. In addition, the general trends of certain lines and tone-masses possess expressive qualities of their own apart from the details which compose them — a fact to be kept in mind when dealing with the matter in hand.

Uphill-Effects

Under this head may be included any subject rising above the level of the observer, from a winding hill-path to a mountain-peak.

In all cases the feeling of height seems to be more readily expressed by having the foreground composed of broad, rather dark masses, and the lightest tones well up in the composition, since the object is to keep the eye moving upward and concentrate attention toward the top of the pic-



THE CURVING SHORE — WILLIAM S. DAVIS

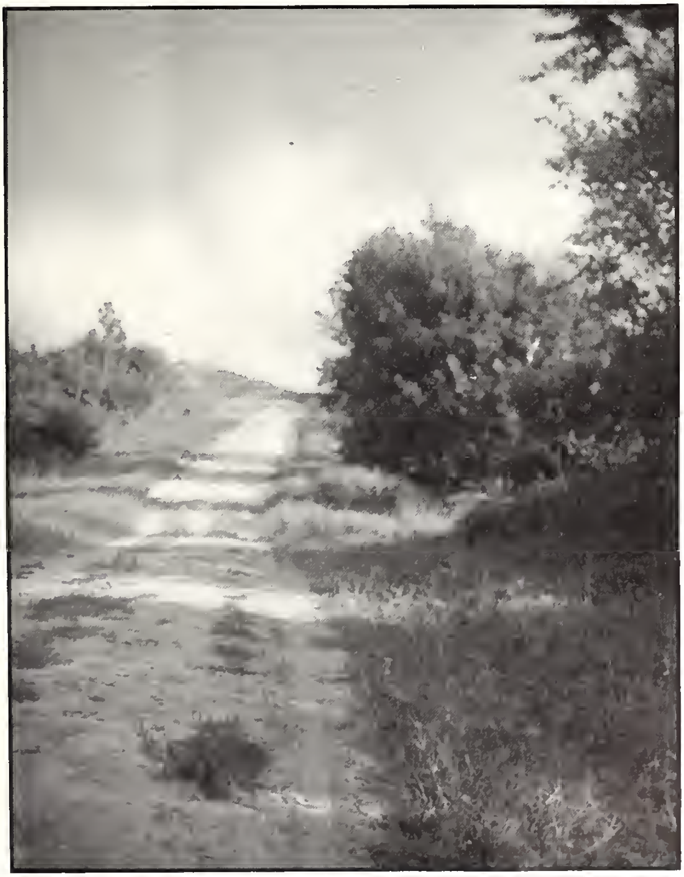
ture. A light spot of tone (which might be a cloud, a snow-covered mountain-peak or other appropriate feature) not only serves this purpose by catching the eye, but also suggests the lighting found in high and open spaces. Sharp spots of contrasting tone, or excessively prominent details, below the objective point are best avoided.

A high and broken sky-line is usually a help, since we naturally have to look up to see an object on a higher level. Here is where the value of sweeping lines running in upward curves and angles is appreciated, not alone in the sky-line proper, but in the outlines of the larger masses of tone as well, because lines with a vertical trend assist in indicating height for the same reason that horizontal ones convey the opposite effect. For this reason in an uphill-picture it is worth while to make the most of curves and angles while suppressing horizontal lines. A possible exception to the latter might be a long flight of steps, in which a series of horizontal lines are, of course, repeated; but even in a case like this such lines taken in the aggregate form an angular or curved mass leading upward.

When the highest parts, as in a mountain-view, are at a considerable distance one should make much of the aërial quality, for if it is made evident that a large mass filling a large space in the composition is a long distance away the feeling of size, likewise height, is increased, since the observer naturally reasons that in such a case only a very big object could occupy so much of the picture. This effect is increased when it is possible to contrast the lighter tones of the distance by strong, deep shadows or dark foliage in the immediate foreground, showing, however, no more than is required for the purpose. Thus the device of a striking tree-branch in the foreground overhead may serve another more important purpose than mere decorative effect.

Another means to suggest rising ground is to show just the top of some object above the sky-line, thus indicating the downward dip in the land beyond. A house-top back of a hilly slope is suggestive; likewise the upper portions of well-defined clouds, like the cumulus type, which never touch the horizon-line of a level landscape.

When buildings can be introduced they are of assistance in several ways, because of possessing certain known vertical and horizontal lines, the position of which in a picture at once determines the height of the standpoint with relation to them. If, for example, the foundation-line of a building seen in perspective slants down toward the more distant corner of the structure, we know the point of view must have been lower than this line, the sharpness of the angle at which such a horizontal line is shown giving a pretty fair idea of the difference in level between the building and spectator. "The House on the Hill" indicates this. If several buildings are shown, say on a hillside or along a hilly street, the comparative position of known horizontal lines will make it possible to estimate the varying level of the ground on which they stand. It is lack of such definite lines which makes it more difficult in many cases to express the feeling desired in a land-



AN UPHILL-ROAD WILLIAM S. DAVIS

THE HOUSE ON THE HILL
DOWN TO THE HARBOR, NOANK
WILLIAM S. DAVIS

scape pure and simple, though attention to some of the points previously noted will usually make it possible even without the aid of architectural lines.

Downhill-Perspective

Here attention to the general sweep of the main lines in a picture is also important, but in some respects their use is reversed.

Horizontal lines frequently play a valuable part in a downhill-view, more especially in the distance, where it is desirable to suggest flatness in the portions below the point of view.

While at first thought it may not seem consistent that a high sky-line can be employed to help both an uphill- and downhill-effect, it is nevertheless true, but with this important difference, that in the latter case one must make it evident that the expanse spread out below is comparatively level instead of sloping upward. A nearly straight horizon with sufficient details to indicate the distance of various parts helps to accomplish this, together with proper atmospheric quality. Curving lines in the middle-distance and distance are of use only when it is evident that they are formed by level portions of the subject, as a curving shore, or winding stream through meadows. A flat sheet of water with the distant shore-line well above the center of the composition gives the impression of looking down upon it.

When buildings of any kind are included the effect of perspective in the roofs, together with the position of the horizon-line above them, at once conveys the idea of the spectator being upon a higher vantage-point, as in "Down to the Harbor."

Including just the roof of a house in the foreground at the very bottom of the picture, together with the distance showing above, is effective; while with a row of buildings the rise of horizontal lines as they recede indicates the viewpoint.

Another feature worth calling attention to is this. If one is standing upon an elevated spot, such as a cliff or steep hill, just far enough from the edge for the immediate downward drop to be invisible, the edge of the foreground will cut off the view of objects on a lower level for quite a distance, so in consequence the subject-matter visible jumps abruptly from the large clearly defined masses composing the immediate foreground to the much diminished image of the middle-distance and more remote parts. "The Curving Shore" shows this feature to some extent, as the nearest portion of the beach is hidden by the stone coping and bushes around the hillside-terrace which occupies a part of the foreground.

Strong vertical lines in distant parts below the spectator are better avoided as a rule; but in the foreground, and rising from a level with the observer's standpoint, they often serve as a useful note to accent the flat panoramic expanse spread out below.

In the matter of distributing tone-masses, instead of keeping the foreground rather quiet, as in uphill-effects, it is sometimes beneficial to have a clear accent of contrasting tones; for, representing as it does an elevated point of view in the open, strong lighting might well fall on this portion of the composition. Then, too, as has been pointed out before, a light tone may be suggestive of height and space, while moderately dark tones in masses convey a feeling of depth; so if in addition to a clear-cut note of contrast in the immediate foreground the nearer portion of the parts below the observer can be shown in shadow, this will still further help the impression. Such a combination might be produced when looking from a hillside, if the foreground (in good masses of light and shadow) starts from one side of the picture and slants downward quite sharply, while the valley beyond lies in a broad shadow near the bottom of the composition.

How to obtain the most effective line and tonal combinations may often prove a difficult matter to decide, but since changes in the direction of lighting and state of atmosphere produce so many alterations it is always best to study a subject under different conditions whenever possible, and then make a careful choice.

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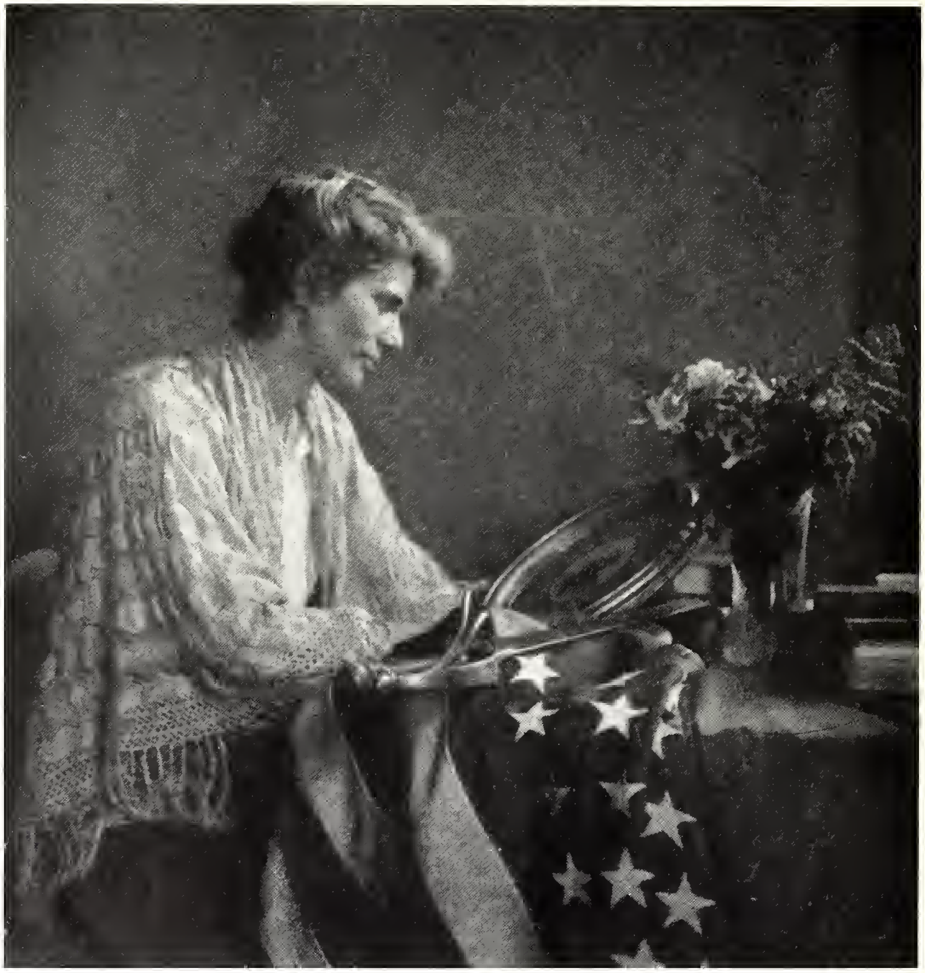
The sentiments which may be aroused by a landscape-photograph are numerous, joy, horror, sadness, calm, peace and others being expressible by pure landscape, whereas the introduction of figures or of some suggestion of life affords the possibility to express still more, such as sympathy or love, though here we begin to approach the realm of genre. It seems to be generally the case that the deeper emotions are the quieter ones, and the worker who wishes to produce the greatest possible effect will usually make a greater effort to arouse these than to appeal to the lighter ones, such as joy or amusement. However, strict adherence to this plan will produce monotony of results and, unless the photographer makes only a few prints in the course of a year, will cause him to repeat himself. The writer feels it to be a mistake for an artist to specialize, as an occasional excursion into portraiture by a landscape-worker, or into genre by a portraitist, will result in a fresher viewpoint when the artist returns to his own field.—Paul Lewis Anderson, in *Pictorial Landscape-Photography*.



MEMORIAL DAY
LOUIS ASTRELLA

EDITORIAL

Exemplary Demonstrations

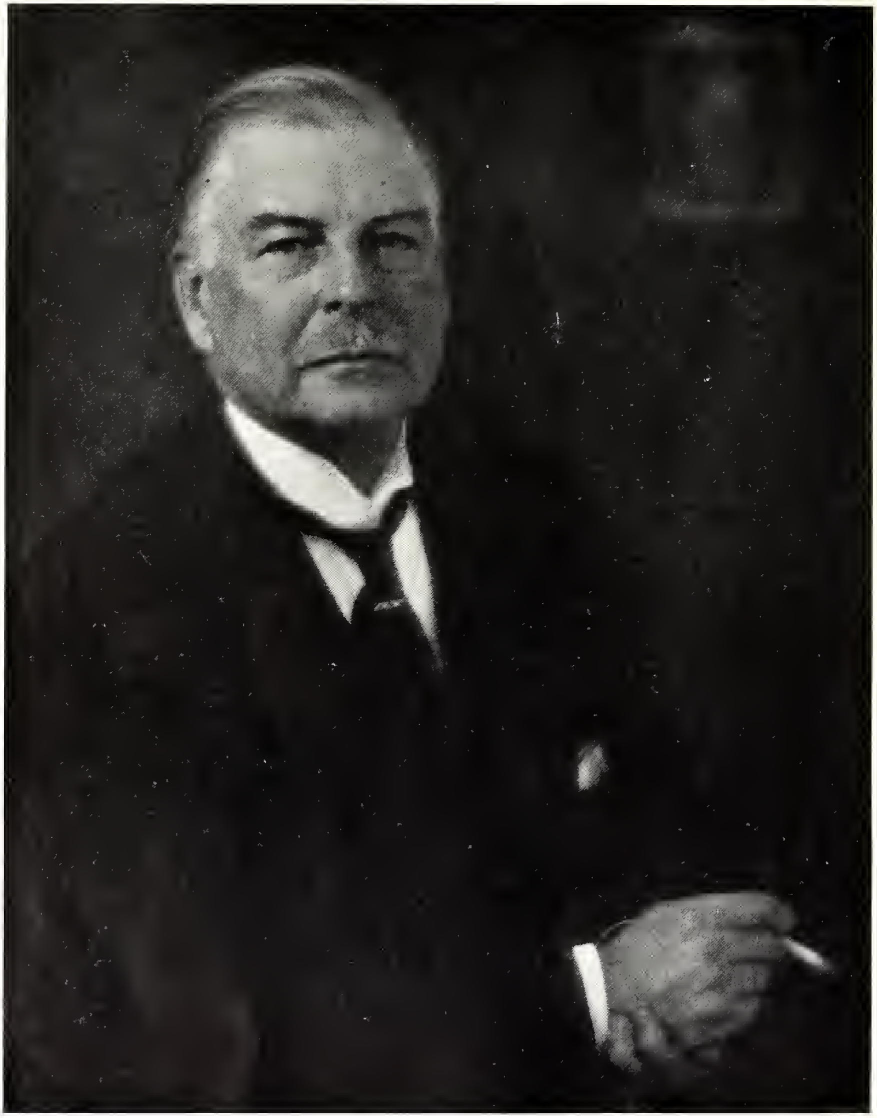
ONE of the most instructive features of a course in practical photography — photographic portraiture — is a series of demonstrations in lighting and posing with a good model. The value of such lessons may be appreciated by the fact that they usually form a part of the program of photographic conventions, and professional workers of the highest rank are invited to display their ability in arranging the sitter before the camera. When the conditions of such demonstrations are favorable, so that the artist may proceed without embarrassment to carry out his individual ideas with regard to pose, light and expression, just as if he were at work in his own studio, good results may be expected. Even if the appointments of the studio, improvised for the occasion, are not altogether adequate, the artist may be able to illustrate his individuality in arranging the figure, controlling the light or subduing a troublesome accessory. Valuable lessons to the uninitiated have been thus imparted, and studio-proprietors and home-portraitists who came from a long distance to witness these demonstrations have declared themselves amply repaid for the effort to attend that particular convention. On the other hand, demonstrations as satisfactory as these do not characterize every convention, and many are the times when the demonstrator has gone through the usual motions in a perfunctory or half-hearted manner, either because conditions were not conducive to a satisfactory exemplification, or he lacked the ability to impart his knowledge. In any event, he failed to do justice to his reputation as a studio-artist. When, however, the occasion demands a convincing analysis of serious problems in studio-portraiture, and the results are disappointing, because of inadequate preparation, the committee in charge is to blame.

During the talks given at the annual convention of the Professional Photographers' Society at New York, held in Hotel McAlpin, last February, information of much practical value was imparted; but the demonstrations before the camera, with the aid of a vertical skylight and professional models, do not appear to have yielded results commensurate with the efforts expended. The posing of the models, who lacked nothing in grace and attractiveness, impressed the spectators in the light of an entertainment rather than a serious object-lesson. Viewing the matter from the side of utility, however, Elias Goldensky — he of serious mood and lofty ideal — gave utterance to sentiments that were commendably frank and honest. He said, in substance, that it is very easy to make pleasing pictures of handsome, graceful and well-formed models who are experienced in posing before the camera, but that most professional photographers had to struggle with sitters that were generally awkward and not favored in face or figure.

If the executive committee of the National Association — and the idea applies with equal force to camera clubs eager to profit by object-lessons in portraiture — wishes to derive the greatest benefit from demonstrations to be conducted by master-photographers at future conventions, it should consider the advisability of providing, besides attractive professional models, one capable of personating the average woman sitter as regards inadequacy of good looks, grace and responsiveness. The use of such a model will serve to illustrate the many problems that every portrait-photographer has to face, and how they may be solved. It may not be amiss to add that, unless the demonstrator has had experience in talking before an audience, and knows his lesson well beforehand, he should prepare himself thoroughly for the ordeal, that he may satisfy his audience and do himself justice.

The Veracious Character of Photographs

TIME was when a photograph was regarded as indisputable evidence in legal procedure; but since the advent of the camera it has fallen from its high estate. It is no longer trusted as readily as hitherto, unless it be the kind whose integrity is invulnerable. Photographs used in divorce-cases have usually carried the day; but in a recent suit of this kind, Justice Goff, of New York, made a rather sensible decision, in that he declined to accept as valid evidence a photograph introduced by counsel. There is no denying the fact that the term "photographic accuracy" has lost something of its former spell; but the way in which plates and films can be juggled and altered without detection has made photography very unreliable in court. In this connection, Justice Goff is quoted as saying: "The inherent infirmity of such testimony is apparent when the protean character of photography is considered."



PORTRAIT OF E. L'H. McGINNIS
FIRST PRIZE — HOME-PORTRAITS
T. W. KILMER, M.D.

PHOTO-ERA MONTHLY COMPETITION

For Advanced Photographers

Closing the last day of every month. Address all prints to PHOTO-ERA, Monthly Competition, 383 Boylston Street, Boston, U. S. A.

Prizes

First Prize: Value $10.00.
Second Prize: Value $5.00.
Third Prize: Value $2.50.
Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

Prizes may be chosen by the winner, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in Photo-Era, or in books. If preferred, the winner of a first prize may have a solid silver cup, of artistic design, suitably engraved.

Rules

1. This competition is free and open to any camerist desiring to enter.

2. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. ***Subjects which have appeared in other publications are not eligible, nor may duplicate prints be sold, or entered in competition elsewhere, before Photo-Era awards are announced.*** Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

3. *Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data.*

4. *Each print entered must bear the maker's name, address, the title of the picture and the name and month of the competition, and should be accompanied by a letter,* SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what competition it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of Photo-Era, unless otherwise requested by the contestant. If suitable, they will be published in Photo-Era, full credit in each case being given to the maker.

6. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15, unless they are packed with *double thicknesses of* ***stiff*** *corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express very cheaply and with indemnity against loss.

7. The prints winning prizes or Honorable Mention in the twelve successive competitions of every year constitute a circulating collection which will be sent for public exhibition to camera-clubs, art-clubs and educational institutions throughout the country. The only charge is prepayment of expressage to the next destination on the route-list. This collection is every year of rare beauty and exceptional educational value.

Awards — Home-Portraits

Closed March 31, 1916

First Prize: T. W. Kilmer, M.D.
Second Prize: Mrs. Charles S. Hayden.
Third Prize: Alice Willis.
Honorable Mention: H. R. Decker, Charles Ferris, J. H. Field, Frank Flannery, Mrs. C. B. Fletcher, Alton Franklin, A. B. Hargett, Ruth Manzer Henry, Joseph B. Kahill, George B. Loucks, Leander Miller, G. H. Najarian, Williamina Parrish, Pillsbury Studio, Claude L. Powers, William H. Spiller, William C. Stratman, Mrs. H. J. Wiegner.

Special commendation is due the following workers for meritorious prints: Grace Adams, James Allan, Linnaeus Allen, W. S. Bailey, C. K. Baker, Otto G. Baumgartner, James D. Bennett, G. M. Bibby, Mabel Heist Bickle, Milton M. Bitter, Virgil R. Boozer, Jacob Bosshart, F. E. Bronson, Adele Brush, J. G. Burns, J. S. Burrows, C. M. Campbell, W. W. Cowles, F. E. Crum, O. C. Dean, A. A. Dole, J. F. Eden, Thomas Elsum, William Gilchrist, Harriet J. Goodnow, Antoinette B. Hervey, W. R. V. Howell, Suisai Itow, E. J. Koester, Hannah Knight, Richard D. McCue, Fanny McOmber, Hubert C. Mohr, H. A. Morton, Marguerite Munger, Louis R. Murray, E. M. Pratt, R. E. Reynolds, L. Vinton Richard, Martinique M. Saucier, A. J. Sheils, D. Vincent Smith, W. G. Takagi, Clarence Teamer, Anson M. Titus, Gerald Tushak, H. S. Walker, Elliott Hughes Wendell.

Subjects for Competition

"Speed-Pictures." Closes June 30.
"Nature-Study Subjects." Closes July 31.
"Figures in Landscape." Closes August 31.

Photo-Era Prize-Cup

In deference to the wishes of prize-winners, the Publisher will give them the choice of photographic supplies to the full amount of the First Prize ($10.00), or a solid silver cup of artistic and original design, suitably inscribed, as shown in the accompanying illustration.

Nature-Study Subjects

Photo-Era Competition — Closes July 31, 1916

For the embryo naturalist, or even for the more advanced student, there could hardly be a greater aid and inspiration in his work than a camera. For the botanist how much more of the life and spirit of the flower is brought to mind by the clear, brilliant photograph, showing the plant in its native haunts, than by the dry and colorless specimen in his herbarium! The one is full of the individuality of growth, the sunshine and fresh air, and all the charm of the growing, living flower, whereas the other is only the dry bones of the plant — suggestive of death rather than life.

An exceedingly beautiful, interesting and instructive "herbarium" might be made by photography. To give full value to such a collection it would be advisable to make two photographs of each specimen: one to be taken in its habitat, showing the characteristic habit of growth, location, relative height and typical surroundings; the other to be taken of the individual plant prepared as for pressing, and showing it "root and all, and all in all," each leaf and flower distinctly visible and sharply defined.

For this class of work a small stop should be used and every effort made to secure minute detail, as, to be of value, the photograph must contain all that the pressed specimen would show — the number of petals, sepals, etc., the veining of the leaves, whether stems and leaves are smooth or downy, and all details that are essential to the analysis of the specimen. One blossom should be photographed in profile, to show the calyx, and one "full face," to show the number of styles and anthers. If the prints can be colored well, so much the better for the record; if not, a careful notation of coloring should be made on each mount.

One who has collected such an herbarium has fixed in his mind, as well as on paper, a valuable store of knowledge on the subject of plants and flowers. From the artistic standpoint, of course, the flower in its natural setting is the thing to be studied. The trouble to get satisfactory artistic portrayals of this fascinating subject is the prodigality of Dame Nature. She scatters her beauties with such a lavish hand that it is hard to find an isolated clump of blossoms that stands out by itself in a way to tempt our cameras. If one can be found near the foot of a tree or by some large rock, such natural backgrounds will be admirably adapted to our purpose; but it is not always possible to find such.

Another way to isolate the specimen is by lighting. One sometimes sees an effect in the woods that would make a beautiful picture if it could be caught when the sun is just leaving a hillside, for instance, and the ground itself is in shadow, but the sun just catches some tall clump of false Solomon's seal or other taller-growing flower. The effect is charming, but fleeting. It must be seized on the instant, or lost.

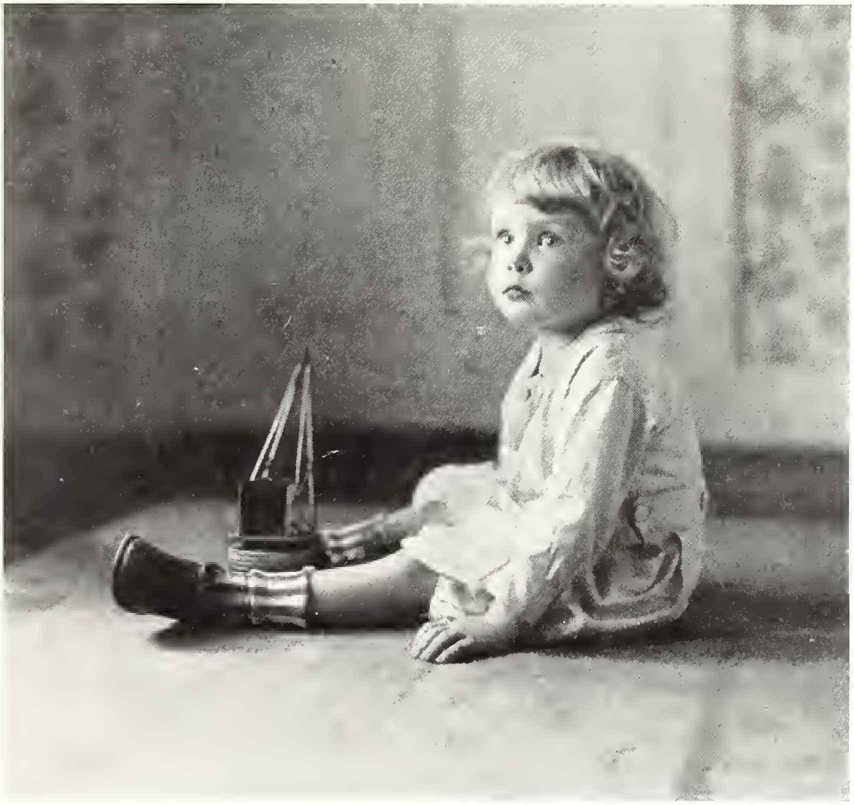
But flowers are not the only things in nature worthy of study, by any means. There are our friends in fur and feathers to be studied and captured by our lenses, so much better from our standpoint, as well as theirs, than when captured by traps or snares. It takes much patience and perseverance to secure them, however, and one must not be discouraged by many failures. The surest way to locate the birds is to find a nest, then, with self and camera hidden from sight, wait as patiently as may be until a propitious moment arrives.

The nests themselves are good subjects for pictures — whether with the eggs or the young birds. The nests of birds that build on the ground, such as the junco, veery and oven-bird, although harder to find, are more easily photographed once they are located, and often have most beautiful settings of ferns and flowers. Another beautiful subject is found where butterflies gather. A big, yellow swallowtail on a spray of lilacs makes as attractive a picture as one need desire, and many other specimens would make most attractive studies. Even the common spider and his wonderfully woven web make good picture-material, especially if the web be found in the early morning when studded with dew-drops.

There could hardly be a pleasanter pastime, or one that would be more instructive, than this of roving the woods with a camera, intent on finding not only the obvious beauties that are plain to see, but the hidden or obscured beauties that are all about us. There is the shad-bush that stands out from her background of dark evergreens like a luminous cloud, and could not possibly be overlooked; but down at her feet is a "scarlet-capped elf-needled mat of moss," with fairy goblets of silver-gray and slender spires of verd-antique set with rubies. There, on a moss-covered rock, sits Master Chipmunk, scolding away at us for intruding on his preserves, and, growing from a crevice in the rock below him, are the feathery fronds of the rare little ebony spleenwort. Down to the marsh we go, and there we find all sorts of rare and beautiful treasures — dainty calypso and ghostly Indian pipes, showy ladies' slippers and various weird orchids. Wherever we turn our steps, something comes to light that will make a fit subject for the camera.

PARTRIDGE-NEST KATHERINE BINGHAM

SECOND PRIZE
HOME-PORTRAITS



BILLIE MRS. CHARLES S. HAYDEN

One of the greatest discoveries is the always well-hidden nest of the olive-backed thrush or oven-bird. Concealed under leaves and grass, often on the side of some little hollow, it defies detection, except by very sharp eyes; but, once located, it not infrequently lends itself well to our purposes, and if we succeed in concealing ourselves well we may be able to catch the bright-eyed little mother herself when she returns to her family.

If we get away from civilization into the real wilderness we may have a chance at some of the animals in the wild state. A subject that only once or twice has been photographed successfully is the beaver building his dam. This was accomplished by concealing the camera and running a long string to a point where the beavers could be observed without disturbing them at their work. "Reddy Fox" and his family make delightful subjects, with their long noses, keen eyes and bushy tails. Deer are most graceful animals, but with keen senses. So quick are they to detect anything out of the ordinary that nearly all pictures of them in the wild state show unnatural, stiff and startled positions.

But even if one cannot go far afield for subjects one need not be debarred from nature-study. One's own dooryard will furnish many things of interest, and even the winter-months need not be devoid of material. A cone-bearing branch of evergreen is often just as beautiful as a flower-laden bough in springtime, and for the photo-micrographer what is more beautiful than the varied star-forms of the snowflakes! Tree-studies at any season of the year are interesting, but particularly so in springtime, when the catkins and pussy-willows are so charming, and the delicate transparent texture of the leaves makes them more easy of portrayal, all the delicate veining showing up so nicely. Fruiting grass and rushes are also attractive subjects, and lend themselves to the decorative Japanese treatment most charmingly.

Nature-study subjects may be of either pictorial or scientific interest, but one class need not exclude the other. Because an arrangement is good in line and makes an attractive picture is no reason why it should not show detail with sufficient accuracy to be of scientific value also. On the other hand, because a plate is to show details of construction and texture is no reason for ugly arrangement and unpleasing form. The two should work together. Any natural form that is either beautiful or interesting scientifically is a fit subject for this competition, but preference will naturally be given those of pictorial value as well as technical perfection.

KATHERINE BINGHAM.

The September Competition

THINKING that it may stimulate greater interest to have a more definite subject for the monthly competition closing September 30, it has been decided to omit "Field and Wood" and substitute "Animals in Landscape." Miss Bingham's article on this subject, with suggestions of both an artistic and technical character, will appear in the August issue.

THE CRUCIBLE

A MONTHLY DIGEST OF PRACTICAL FACTS FOR PHOTOGRAPHIC WORKERS

With Reviews of Foreign Magazines, Progress and Investigation

Edited by PHIL M. RILEY

Readers are encouraged to contribute their favorite methods for publication in this department
Address all such communications to The Crucible, PHOTO-ERA, 383 Boylston Street, Boston, U. S. A.

Substitute Restrainers

Even such a tremendous increase as 1,550 percent in the price of potassium bromide — from 50 cents to $8.25 a pound — will not greatly alarm the average amateur photographer, because his yearly consumption is relatively small. In the production of a negative he rarely employs bromide in the developer unless he has reason to believe there has been considerable overexposure; his regular use of a restrainer is confined to the development-paper formula to ensure clear whites at the rate of only about 120 grains for 300 to 500 ounces of the mixed developer.

The professional, however, will feel the increase keenly, for he is in the habit of including bromide in his regular working-solution for negative-work whether he fears overexposure or not, and the very amount of his business will make the increased expense an item to be reckoned with.

The reason for the constant presence of a small amount of restrainer in the developer is explained by *The Amateur Photographer* as follows: Free potassium bromide in the developer at starting forms with the silver bromide of the plate (in some way altered by light-action and forming the "latent image," whatever that familiar phrase may really stand for) a combination less readily acted on by the developer, and so "restrains," or, as some prefer, "retards" the developing-action, for a while at any rate. It thus holds back, as it were, the developer from responding to general feeble light-action (which otherwise develops into "fog") until the developer has operated on the parts more strongly acted on by light. Thus we may see how *in a certain sense* a restrainer slows a plate's speed. But this phrase is very often seriously misunderstood, for any practical slowing of the plate by bromide calls for much more bromide than is needed to keep down fog.

Some plates, particularly certain English brands, require a little fog-restrainer, although many brands developed with a suitable pyro-soda formula unrestrained show virtually no fog, although theoretically every plate shows some fog. With stale plates a restrainer is absolutely necessary, as the silver salts in the film seem to undergo a certain amount of decomposition, and reduction (development) takes place where the light has not acted.

The usual dose of potassium bromide is 5 drops of a 10-percent solution per ounce of mixed developer; and, of course, ammonium and sodium bromides may be used in a like manner. Potassium bromide is bulk for bulk the weakest restrainer in common use, ammonium bromide the strongest and sodium bromide the medium, the most suitable proportions being potassium 120, sodium 103 and ammonium 98. All of these have been greatly affected in price by the war. Ammonium bromide costs $6.25 per pound at the time of writing, March 9, 1916.

All of the following salts have been suggested at some time or other as restrainers, the quantities given being said to be equivalent to 1 grain of potassium bromide.

Common salt, 3 to 5 grains.
Ammonium chloride, 2 to 3 grains.
Zinc chloride, ½ grain.
Boric acid, 3 drops of a 1 to 30 solution in each ounce of mixed developer.

The first two of these are still very cheap, and deserve a careful trial to determine if there be any serious objections to their use. Photo-Era will be glad to receive personal experiences along this line.

The only restrainers that are of any service when development has started are the citrates: they stop the shadows and allow the highlights to go on developing, thus tending to increase contrast. Indeed, it is common knowledge that cases of extreme overexposure can be more reliably saved with sodium citrate than potassium bromide. According to *The Amateur Photographer* this is explained on the theory that citric acid converts the ordinary alkaline developer into a physical developer by dissolving some of the silver which is not wanted in some places, and depositing it in other places where light-action has been considerable. About 5 grains of sodium, potassium or ammonium citrate would be a normal quantity per ounce of developer.

Probably the principal reason why citrates have never been in great favor lies in their tendency to grow a ferment, mould or fungus (*Saccharomyces mycoderma,* one of the yeasts) which decomposes the citrate in the carbonic acid and water. But this growth is slower in strong than weak solutions, and can be prevented by the addition of a little salicylic acid. It is, however, better to dissolve only a small quantity at a time, so as to have a fresh solution.

Unfortunately, the more familiar citrates of sodium, ammonium and potassium are somewhat deliquescent, and so must be kept well corked in a dry place. It is, however, quite a simple matter to prepare citrates from citric acid. This salt is dissolved in warm water and then the alkaline salt added a little at a time until the solution is neutral to litmus paper. In ½ ounce of water dissolve 72 grains of powdered citric acid, then add slowly some one of the following salts until the acid is neutralized: Sodium bicarbonate, *about* 90 grains; or sodium carbonate (crystals), *about* 145 grains; or potassium carbonate, *about* 90 grains; or strong liquid ammonia, *about* 65 minims. Make up the bulk to 1 ounce with water and you will then have approximately a 10-percent solution.

About 1 dram of this solution added to each ounce of developer would be an average quantity.

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The expression of the sentiments of a nation are marked with its imprint.— *Henry Havard.*

THIRD PRIZE
HOME-PORTRAITS

MOTHER AND CHILD ALICE WILLIS

Invisible Photographs

In time of war particularly, when certain information should be rigorously kept secret, even from subordinates in the same service, it may be useful for government officials, military commanders and others to have a method of keeping copies of plans, documents, photographs, etc., in their possession in such a manner that they are ordinarily invisible, but can be revealed by a simple process when required. After trying numerous printing-papers and bleaching-baths, a writer in *Progresso Fotografico* has come to the conclusion that the least visible image is given by the thin sepia paper of commerce. It is exposed rapidly to direct light, developed in ordinary water, then treated with a 2-percent hyposulphite solution, and washed for a few minutes. The images obtained are not very rich in half-tones, but this is not of great importance for practical purposes. When the prints are placed in a solution containing, per liter, 10 grams of copper sulphate, 20 grams of potassium bromide, and 5 drops of hydrochloric acid, the image disappears instantly, and, after washing, one may dry the print, upon which nothing is visible. If the precaution is taken to plunge the print in a weak bath of potassium bromide, even exposure to light does not cause any reappearance of the image. The image may be rendered visible immediately by any developing-bath ordinarily used in photography, and this operation may be carried out in full light. There is no need to fix after development; a simple washing with water suffices.

The Amateur Photographer.

Brown Mottles in Stock

Occasionally we receive a complaint from a photographer enclosing prints which show a peculiar black mottled effect in the stock which is noticeable only when the print is examined by transmitted light. This trouble has every appearance of a defect in the raw stock, as the mottles do not appear in any particular place in the print, but are scattered and of peculiar formation.

After a number of tests at our research-laboratory, a similar effect was produced by using a very strong acid shortstop on the prints, leaving them in this bath from 10 to 45 minutes. After removal a number of transparent spots were noticeable which immediately disappeared after the prints had been toned in a hypo-alum bath, the temperature of which was not allowed to rise above 120°F. By allowing the temperature of the bath to rise from 130° to 160°, however, these spots became a dark brown which appeared black to the naked eye when the prints were dried. We failed to

HONORABLE MENTION
HOME-PORTRAITS

A. L. GEORGE B. LOUCKS

note this trouble when the shortstop was made up as recommended in *The Professional Cyko Pointer.*

Extreme care should be observed in purchasing acetic acid, as it is made of several different strengths, and every photographer should insist on the commercial grade when purchasing from the local supply-house.

The following list published by Merck shows the different grades:

No. 1 acetic acid	99.5%
No. 2 glacial acetic acid	96 %
No. 3 acid acetic	90 %
No. 4 acid acetic	36 %
No. 5 acid acetic diluted (commercial)	30 %

The No. 5, or, as it is commonly known, No. 8 or 28%, is only one-third as strong as the glacial acetic, and should always be purchased for photographic purposes unless glacial is specified.—*Portrait.*

Combination-Printing in Carbon

It is generally considered difficult to combine a figure and background or to insert a figure in a group when printing in carbon, but a friend who is skilled in three-color carbon showed us how simple it really is if the methods of the color-worker are followed. In the first place, the two prints are made, as usual, on tissue from the same band, and cut the same way of the band, either with the length or the width of the roll. The two temporary supports should both be rigid, ordinary waxed opal for the figure, and collodionized glass for the background. Each piece of exposed tissue must be soaked before mounting at exactly the same temperature for the same time, about three-quarters of a minute at 60° F. They are then developed and dried as usual, and the figure transferred to the ordinary double-transfer support. After cleaning off every trace of wax with benzole, the glass bearing the background is dipped into water and then coated with 5-percent gelatine solution. The figure print, soaked, of course, until limp, is carefully laid down upon it and lightly squeegeed. The glass is then turned over, and the prints registered by sliding one on the other. When the correct position is attained, the squeegee is again gently applied, and the whole put aside to dry. The print comes off "full gloss," but if this be objected to the collodion may be cleaned off with the usual solvent.

The British Journal of Photography.

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It is painful for a composer to write, for a poet to feed his poetry with his prose, for a painter to pay for his pictures with his lithographs; in a word, for an artist to live off the trade of his art.—*Théophile Gautier.*

THE ROUND ROBIN GUILD

An Association of Beginners in Photography

Conducted by KATHERINE BINGHAM

This association, conducted under the auspices of PHOTO-ERA, and of which PHOTO-ERA is the official organ, is intended primarily for the benefit of beginners in photography. The aim of the association is to assist photographers by giving them information, advice and criticism in the Guild pages of PHOTO-ERA and by personal correspondence. Membership is free to subscribers and regular purchasers of the magazine sending name and address to PHOTO-ERA, The Round Robin Guild, 383 Boylston Street, Boston, U. S. A.

The "Capacity for Taking Pains"

There could hardly be an avocation that would give returns more nearly in proportion to the amount of care and pains expended than photography. Some novices give up the pastime because of the expense, when, as a matter of fact, a larger proportion of that expense than they dream of is due to a waste of material through carelessness. A careful reading of the book of instructions that comes with each camera will save many a film that lack of the knowledge, thus acquired, might have spoiled in exposure, in loading or unloading. But the painstaking compounding of developer and fixing-bath, clean trays or tanks and care about finger-marks, dust and other blemishes will make an astonishing difference in results.

The darkroom-light is another source of danger. It should be so arranged that the light does not fall directly on the tray; and although it may be a rather large illuminated surface it should be of low power and composed of both orange and red elements. Stray light through cracks, around window or door is also a fruitful cause of trouble. On going into the darkroom from a brightly lighted one the eye does not at once detect these rays of white light; but shut yourself in and stay for several minutes and what seemed like total darkness at first may prove to be quite otherwise. Even after all leaks are stopped and the light made safe it is not wise to spend too long examining the negatives; a few seconds will tell you about density, and curiosity as to the details of the picture would better be curbed until after fixation.

Thorough fixing is another point regarding which care is worth while. A film is not fixed the minute the milky look has disappeared, as many seem to think, but should be left in the bath for five or ten minutes longer to ensure complete fixing. In washing, also, one must be thorough. A film is not washed that has simply soaked in water for an hour. There must be a circulation of water of sufficient vigor to keep the film moving and carry off the dissolved chemicals. Either insufficient fixing or washing is responsible for most troublesome stains and spots that appear on negatives after a year or so and often completely destroy a plate of value. Because of the ills and dangers which negatives are heir to, many workers keep on file either a transparency or a glossy print of their favorite plates, so that in case of loss a second negative can be made.

But the point in the whole process of producing a photograph where the greatest waste takes place is in the making of the print, especially if one works in the evening, when stains are less perceptible. Great care must be taken that all solutions are fresh and at proper working-temperature. The tendency is to economize on solutions, but a few spoiled prints cost more than would the new bath, and then you must have the new bath finally for the remaking of the lost prints — a waste of time, solution and paper.

If things do not seem to be going right, stop short and find out what is wrong. Too many times one blunders along making dozens of prints which display innumerable spots or are off color, stained, or flat and otherwise worthless. That is an entirely needless procedure; better far to throw away the developer, clean the tray and mix a fresh solution, being sure that your graduate is clean and everything as nearly right as you know how to make it. If spots or stains appear after placing in the fixing-bath, perhaps that has become exhausted and must be renewed. Clean all trays frequently, and keep your graduates and stirring-rods free of chemicals. Even with fresh, unoxidized developer, a print will very often stain if undertimed and forced in developing.

There is a right time for every negative, and when that exposure is given the print will develop up to the right point and seem to stop. If underexposed the stopping-point is reached before the print has sufficient depth, and it must be coaxed along as far as possible, resulting usually in a weak print, not infrequently with a yellow stain. On the other hand, an overexposed print will flash up in the developer and have to be taken out before development is complete, resulting in a mottled, flat print of little use to anybody. A safe plan is to use a "short-stop" instead of a plain rinsing-water between developing and fixing. This stops all development at once, and ensures the prints being acid instead of alkaline when they go into the hypo; the life of the bath is thus prolonged. If this is not used, care must be taken to see that prints are kept moving for a few seconds after they go into the hypo and that they do not pack together so that the solution has not free access to all parts of the surface. Letting the stirring-rod rest on the face of the print when first placed in the bath was for some time the mysterious cause of purple spots on prints.

Thorough washing is again essential here, the prints being kept in continuous motion in running water for an hour, not allowed to settle to the bottom and lie together in a solid mass, in which case only the top ones would get anywhere near proper washing. It is the washing that ensures the permanence of the print. Not infrequently in an old print one can see distinctly where another print has adhered to it while washing, and the unwashed part is fading, leaving the rest of its original depth of tone.

In mounting, also, there is call for accuracy and neatness, that margins may be even and no glue be deposited in the wrong place. So, from start to finish, one needs, in order to produce a satisfactory photograph, "an infinite capacity for taking pains."

HONORABLE MENTION
HOME-PORTRAITS

GROUP-PORTRAIT FRANK FLANNERY

The Child and the Kodak

One of the "slogans" of the Eastman Kodak Company is "Let the Children Kodak," and the parent who would give his offspring the rudiments of an art-training and teach him an appreciation of the beautiful would do well to follow the advice. There are many valuable lessons that may be easily taught and pleasantly by means of photography. In the case of a boy with a mechanical bent the delicate mechanism of the camera itself will arouse interest in the laws of optics, and the operation and compounding of developers will interest him in the rudiments of chemistry — while to any child the accuracy, orderliness and cleanliness required for good results will be valuable habits to form; for the little people should not be allowed to stop at "button-pressing." They should be encouraged to see the thing through to the end, and almost invariably they will prove enthusiastic workers.

The tank- or machine-developers are so simple that very little help will be needed from the "grown-ups," and that only at first. The blue-print process is a good one on which to start the youngsters; but they will not long be content with that, and the developing-paper process is not too difficult for them to master speedily.

But it is in learning what is requisite for a good picture that the training of the art-sense comes in. Too many of us come to years of maturity before we learn to use our eyes. We are like the celebrity who came back to his home-town to address his townspeople during Old Home Week. Standing on the steps of the schoolhouse and looking off over the heads of his audience, he exclaimed: "But where did you get all this. These mountains were never here when I was a boy!" If none of his available elders are capable of helping him in this way, that is what the criticism-departments of the photographic magazines are for.

If he is interested in flowers, birds, butterflies, he can with a portrait-attachment make such a collection as will be the envy of his friends, and the collecting of it will keep him in the open, increase his interest in nature a hundred-fold and make him a well-informed and intelligent little naturalist.

These are only a few of the benefits to be derived from starting early to form the photographic habit, and only a few of the branches which the child may take up. He will want to try his skill on the members of his family and acquaintance, and in so doing will learn to see the play of light and shade on the human face, the effect of backgrounds, grouping, etc., thus learning to appreciate better the work of the masters of painting when he shall make their acquaintance.

Though I have used the masculine pronoun throughout, all this is equally applicable to "little sister."

THE ROUND ROBIN GUILD MONTHLY COMPETITION

For Beginners Only

Closing the last day of every month. Address all prints to PHOTO-ERA, Round Robin Guild Competition, 383 Boylston Street, Boston, U. S. A.

Restrictions

All Guild members are eligible in these competitions provided they never have received a prize from Photo-Era other than in the Beginners' Class. Any one who has received only Honorable Mention in the Photo-Era Monthly Competition for advanced workers still remains eligible in the Round Robin Guild Monthly Competition for beginners; but upon winning a prize in the Advanced Class, one cannot again participate in the Beginners' Class. Of course, beginners are at liberty to enter the Advanced Class whenever they so desire.

Prizes

First Prize: Value $5.00.
Second Prize: Value $2.50.
Third Prize: Value $1.50.

Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

A certificate of award, printed on parchment paper, will be sent on request.

Subject for each contest is ***"Miscellaneous"***; but only original prints are desired.

Prizes, chosen by the winner, will be awarded in photographic materials sold by any dealer or manufacturer who advertises in Photo-Era, or in books.

Rules

1. These competitions are free and open to all members of the Round Robin Guild. Membership is free to all subscribers; also to regular purchasers of Photo-Era on receipt of their name and address, for registration, and that of their dealer.

2. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. ***Subjects which have appeared in other publications are not eligible, nor may duplicate prints be sold, or entered in competition elsewhere, before Photo-Era awards are announced.*** Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

3. *Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data.* ***Criticism on request.***

4. *Each print entered must bear the maker's name, address, Guild-number, the title of the picture and the name and month of the competition, and should be accompanied by a letter,* SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what contest it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of Photo-Era, unless otherwise requested by the contestant. If suitable, they will be published in Photo-Era, full credit being given.

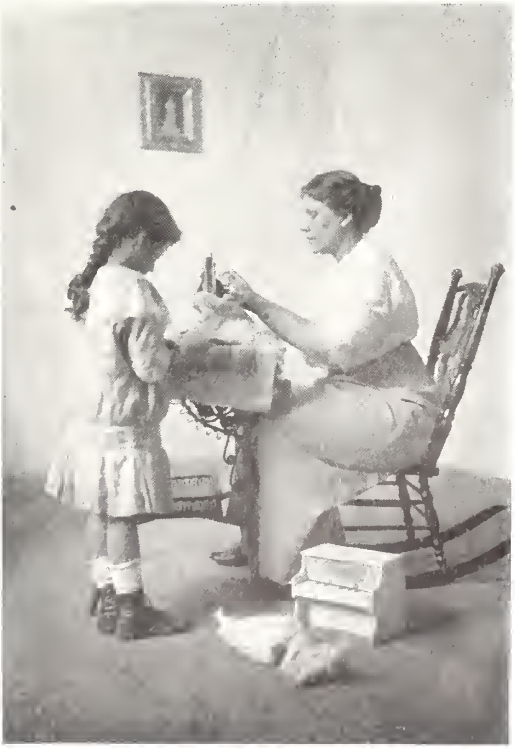
Awards — Beginners' Contest

Closed March 31, 1916

First Prize: Carlos F. de Moya.
Second Prize: R. W. Stevens.
Third Prize: Mrs. H. G. Reed.

Honorable Mention: James Allan, Margaret Anderson, C. K. Baker. J. Louis Cunningham, Martha Curry, George C. Easton, Max Ebel, Carl H. Kattelman, Louis R. Murray, Willard Van der Veer, W. J. Wilson, Elizabeth B. Wotkyns.

Special commendation is due the following workers for meritorious prints: Janet Bowers, E. L. Clarke, Frank Hart, Lewis L. Hertzberg, Ormison O. Hilborn, John H. Johnson, H. M. Keith, Emil H. Kopp, Jr., T. W. Lindsell, Rudolph Motts, C. T. Philipp, Clarence A. Pierce, Everett G. Read, Kenneth D. Smith. M. C. Still, A. S. Upton, Jos. G. Whetson, Oscar G. Whiting, J. H. Woodhead.



THE DOLL'S GOWN — CARLOS F. DE MOYA
FIRST PRIZE — BEGINNERS' CONTEST

Answers to Correspondents

Subscribers and regular readers wishing information upon any point in connection with their photographic work are invited to make use of this department. Address all inquiries to Correspondence Department, Photo-Era, *383 Boylston Street, Boston, U. S. A. If a personal reply is desired, a self-addressed, stamped envelope must be enclosed.*

C. A. S.— **To ensure good cloud-effects in general landscape-work,** you need both an orthochromatic plate and a color-screen; one alone is not sufficient. Since you appear to prefer Seed plates, use Seed Orthochromatic, which are the same speed as the Seed 26x you now employ. Ordinary landscape-work does not require a screen so deep as your 10-time screen. A three or four-time screen would be ample unless absolute color-rendering is a consideration, as in the photographing of furniture, paintings and similar commercial work. Try a Burke & James 3-time screen.

J. L. C.— It would seem hardly worth while to **exchange** your 3A Graflex for a 4 x 5. Both sizes are popular, though we honestly believe that 4 x 5 is the more practical size — that is, more pictures seem to compose well in it than in 3¼ x 5½. With the latter the tendency is to trim from the long dimension, especially in vertical compositions.

The proportions preferred by artists are not far from the photographic size 5 x 7, which is about half way between the two you mention.

T. B.— Yes, it is quite possible **to restore old and stale bromide paper** much the same as stale dry-plates. Soak each sheet separately for one minute in the following bath:

Potassium permanganate	1 grain
Sulphuric acid	6 grains
Water	10 ounces

Then transfer for one minute more to the following:

Sodium sulphite crystals	100 grains
Water	10 ounces

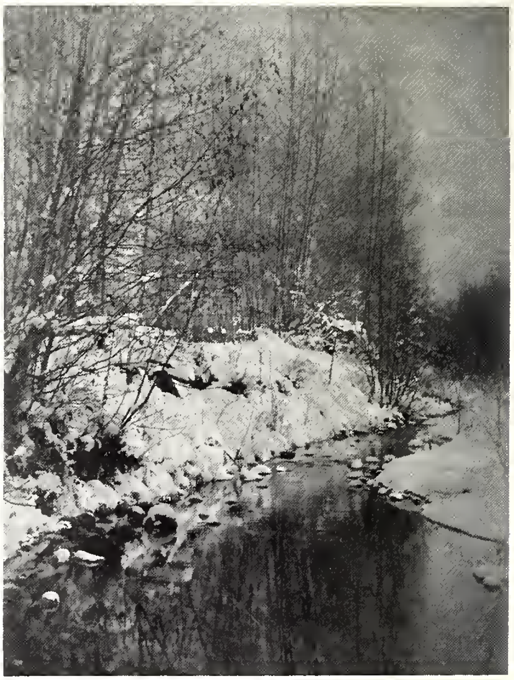
Rinse, and the paper is ready for use wet, or it may be dried if desired for use later. The original speed of the paper will be reduced about one-half in the restoration.

Before going to this trouble, however, it is well to try drying out the paper in a warm oven. Very often storage in a damp place, or a humid period of weather, is the only cause of flat, muddy prints, and drying the paper and using double or even treble the usual quantity of potassium bromide will prove a quick and complete remedy.

W. A. R.— Of course the Cooke-Kodak lens, **the lens with which you make your negatives, is quite suitable for making enlargements from them,** if you desire to use it. It is a highly corrected anastigmat, whereas the Smith lens is a semi-achromatic. The former will give you normally a sharp enlargement; the latter, a diffused focus enlargement. Which you want is almost entirely a matter of personal opinion. Soft-focus work is now enjoying a vogue which promises to be of long life, perhaps permanent if it is not overdone. If it is, it is bound to end as did the "fuzzytypes" of a decade ago, which were the result of printing-dodges.

The use of a soft-focus lens for enlarging rather than negative-work possesses the advantage that the degree of diffusion may be adjusted to suit one's fancy whatever the degree of enlargement — we have reference to the use of diaphragms of varying sizes. If this sort of work appeals to you, and it does in moderation to every art-lover, the Smith lens will not disappoint you. It was the first in its field, and is now used by many world-famous workers. As to carbon, platinum or bromide paper, the latter is the cheapest and easiest to work, but the other two are the supreme achievements.

H. J.— Yes, it is a simple matter **to restore dry-plates which have become stale, fogged or otherwise spoiled through age.** Speed must be sacrificed, and there will be a considerable gain in contrast, but results may be counted upon as clean as can be obtained with fresh, slow process-plates. New material is now so expensive that if one happens to have several dozen stale plates of 5 x 7 or larger size it will pay to restore them for making copies or negatives of any other sort requiring considerable vigor. All of the work must necessarily be done in the darkroom under a safelight.



THE CREEK R. W. STEVENS

SECOND PRIZE — BEGINNERS' CONTEST

Immerse each plate separately for two minutes in the following bath at a temperature of 65 degrees:

Water	10 ounces
Potassium bichromate	25 grains
Hydrochloric acid	12 minims

While in the solution swab the plate over with absorbent cotton to remove any air-bells that may adhere to its surface. Then wash in running water for a minute or two to remove the superfluous solution, allow to drain for a few minutes and immerse for five minutes in alcohol, to facilitate rapid drying, which will not require over half an hour in an ordinary drying-rack. Roughly speaking, the speed of the restored plates may be considered about 50 Watkins or F/32 Wynne.

Print-Criticism

Address all prints for criticism, enclosing return-postage at the rate of one cent for each two ounces or fraction thereof, to Correspondence Department, PHOTO-ERA, *383 Boylston Street, Boston, U. S. A. Prints must bear the maker's name and address, and be accompanied by a letter, sent separately, giving full particulars of date, light, plate or film, stop used, exposure, developer and printing-process.*

A. L. C.— Your picture of a pond with a bridge in the distance is very effective; but it violates one important rule in artistic composition by being divided horizontally in two equal parts, the sky and water being alike in area. The part at the left is black and muddy, and it is quite possible that the subject would yield a better result by genuine artistic treatment.

M. B.—"Ruth" will be improved by printing on a softer paper, for the highlights are a trifle too white. Apparently the sun was too strong for her eyes, for she appears to have closed them during the exposure.

"Getting through the Fence" has been underexposed and overdeveloped; the highlights are too chalky.

"Chums" has also been overdeveloped, although exposure was apparently adequate. Try a softer paper, or, if necessary, reduce with ammonium persulphate.

"A Well-Fed Country-Lass" should be printed deeper on a softer paper if a close approximation to the values of nature is wanted.

"Three Little Kittens" is in many respects the best lighted, exposed and developed picture of the lot. Why not enlarge the interesting portion of it, omitting most of the confusing background?

D. K. S.— "Along the Trout-Brook" appears to be merely a snapshot of personal interest. "Schroon Lake" suffers from lack of unity, the prominent waves in the foreground detracting attention from the distant view, which apparently is intended as the real picture. Of course, this is readily remedied by trimming to a narrow horizontal panel.

V. M. K.— Your photograph entitled "Evening Glow" seems to be a misnomer, as there is no suggestion of evening glow in the photograph. It needs a cloud-effect in the distance to relieve the whiteness of the sky. It is unfortunate that the tree-arrangement did not permit you to place the most important tree in the foreground rather than in the middle-distance.

In a few months you will see in PHOTO-ERA a similar vista through trees, by Mr. B. F. Langland, which will give you a better suggestion than it is possible to do in a letter.

M. C. S.— Your print "The Winding, Wintry Woodland-Stream" is not a subject that lends itself readily to pictorial treatment. Regarding this merely as a composition, the prominent tree at the left is unfortunate, and would better have been omitted, as it attracts too much attention to itself. Were it trimmed away, two other prominent trees would divide the picture-space into three equal parts, which is exceedingly unfortunate. It would appear that this subject were better not photographed.

In "The Dying Day" you have one of those subjects which would be superb in painting, but which loses much in the absence of color in photography. Although you have very wisely softened the definition considerably, the many vertical lines and reflections in the water are still somewhat confusing. Perhaps a print on a matte rather than a smooth paper, an enlargement on a rough paper or a print two or three tones darker would improve matters.

M. B.— Of your two photographs in a country-school, we like that of the children standing the better. You can improve this greatly by rubbing down the negative with alcohol or silver-polish to lower the tone of what appears to be a reflection on the blackboard over the girl's head at the extreme right.

Your other subjects appear to be merely snapshots with confusing backgrounds, that of the little black-and-white pig and the child being considerably underexposed.

C. F. W.— In "Twilight in Winter" you appear to have carried diffusion beyond the bounds of reason. The print also appears to be considerably deficient in subject-material. We like "The Mysterious Wicket" much better, although the penciling intended to replace the loss through halation is exceedingly crude.

H. W. C.—"Sunshine and Shadow" is technically excellent, but it seems to lack a center of interest, the foreground tree not being sufficiently large or distinctive in character to hold the attention.

L. R. M.— We are pleased to note a very considerable improvement in your work of late, the subjects entered in this last competition being particularly pleasing. We question, however, if these exceedingly red tones that you are obtaining are so pleasing as the more conventional sepias, especially those tending towards chocolate brown, as done by hypo-alum toning on gaslight papers. These compositions could be improved on very little.

THE BOY-SCOUT MRS. H. G. REED
THIRD PRIZE — BEGINNERS' CONTEST

Photo-Era Exposure-Guide

Calculated to give Full Shadow-Detail, at Sea-Level, 42° N. Lat.
For altitudes up to 5000 feet no change need be made. From 5000 to 8000 feet take ¾ of the time in the table. From 8000 to 12000 feet use ½ of the exposure in the table.

Exposure for average landscapes with light foreground, river-scenes, light-colored buildings, monuments, snow-scenes with trees in foreground. For use with Class **1** plates, stop **F/8**, or **U. S. 4**. For other plates, or stops, see the tables on the opposite page.

*These figures must be increased up to five times if the light is inclined to be yellow or red.
†Latitude 60° N. multiply by 3; 55° × 2; 52° × 2; 30° × ¾.
‡Latitude 60° N. multiply by 2; 55° × 2; 52° × 1½; 30° × ¾.
¶Latitude 60° N. multiply by 1¼; 55° × 1; 52° × 1; 30° × ½.
§Latitude 60° N. multiply by 1¼; 55° × 1; 52° × 1; 30° × ½.

HOUR	MONTH AND WEATHER																			
	JAN., NOV., DEC. †					FEB., OCT. ‡					MAR., APR., AUG., SEPT. ¶					MAY, JUNE, JULY §				
	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull
11 A.M. to 1 P.M.	1/32	1/16	1/8	1/4	1/2	1/32	1/16	1/8	1/4	1/2	1/50	1/25	1/12	1/6	1/3	1/60	1/30	1/15	1/8	1/4
10–11 A.M. and 1–2 P.M.	1/25	1/12	1/6	1/3	2/3	1/25	1/12	1/6	1/3	2/3	1/40	1/20	1/10	1/5	1/2	1/60	1/30	1/15	1/8	1/4
9–10 A.M. and 2–3 P.M.	1/12*	1/6*	1/3*	2/3*	1*	1/16	1/8	1/4	1/2	1*	1/40	1/20	1/10	1/5	1/2	1/50	1/25	1/12	1/6	1/3
8–9 A.M. and 3–4 P.M.						1/5*	1/2*	1*	1 1/2*	3*	1/30	1/15	1/8	1/3	2/3	1/30	1/15	1/8	1/4	1/2
7–8 A.M. and 4–5 P.M.											1/20	1/10	1/5	1/2	3/4	1/20	1/10	1/5	1/3	2/3
6–7 A.M. and 5–7 P.M.											1/15*	1/8	1/2*	3/4*	1*	1/15	1/8	1/4	1/2	3/4
5–6 A.M. and 6–7 P.M.																1/10*	1/5*	1/3*	2/3*	1 1/2*

The exposures given are approximately correct, provided the shutter-speeds are accurately marked. In case the results are not just what you want, use the tables merely as a basis and increase or decrease the exposure to fit the conditions. Whenever possible keep the shutter-speed uniform and vary the amount of light when necessary by changing the stop. **Focal-plane shutters require only one-third of the exposures stated above.**

SUBJECTS. For other subjects, multiply the exposure for an average landscape by the number given for the class of subject.

1/8 Studies of sky and white clouds.

1/4 Open views of sea and sky; very distant landscapes; studies of rather heavy clouds; sunset- and sunrise-studies.

1/2 Open landscapes without foreground; open beach, harbor- and shipping-scenes; yachts under sail; very light-colored objects; studies of dark clouds; snow-scenes with no dark objects; most telephoto-subjects outdoors; wooded hills not far distant from lens.

2 Landscapes with medium foreground; landscapes in fog or mist; buildings showing both sunny and shady sides; well-lighted street-scenes; persons, animals and moving objects at least thirty feet away from the camera.

4 Landscapes with heavy foreground; buildings or trees occupying most of the picture; brook-scenes with heavy foliage; shipping about the docks; red-brick buildings and other dark objects; groups outdoors in the shade.

8 Portraits outdoors in the shade; very dark near objects, particularly when the image of the object nearly fills the plate and full shadow-detail is required.

16 to 48 Badly-lighted river-banks, ravines, glades and under the trees. **Wood-interiors** not open to the sky. **Average indoor-portraits** in a well-lighted room, light surroundings.

PLATES. When plates other than those in Class I are used, the exposure indicated above must be multiplied by the number given at the head of the class of plates.

For Perpetual Reference

For other stops multiply by the number in the third column

As all the figures in the table opposite are based upon the use of stop F/8, or U. S. 4, it does not appear here among the ratios for other stops.

U. S. 1	**F/4**	**× 1/4**
U. S. 2	**F/5.6**	**× 1/2**
U. S. 2.4	**F/6.3**	**× 5/8**
U. S. 3	**F/7**	**× 3/4**
U. S. 8	**F/11**	**× 2**
U. S. 16	**F/16**	**× 4**
U. S. 32	**F/22**	**× 8**
U. S. 64	**F/32**	**× 16**

Example

The factors that determine correct exposure are, first, the strength of light; second, the amount of light and dark in the subject; third, speed of plate or film; fourth, the size of diaphragm used.

To photograph an average landscape with light foreground, in Feb., 2 to 3 P.M., bright sunshine, with plate from Class 1, R. R. Lens, stop F/8 (or U. S. 4). In the table look for "Hour," and under the column headed "Bright Sunshine," note time of exposure, 1/16 second. If a smaller stop is used, for instance, F/16, then to calculate time of exposure multiply the average time given for the F/8 stop by the number in the third column of the table for other stops, opposite the diaphragm chosen. The number opposite F/16 is 4. Multiply 1/16×4=1/4. Hence, the exposure will be 1/4 second.

For other plates consult the table of plate-speeds. If a plate from Class 1/2 be used, multiply the time given for average exposure, F/8 Class 1, by the number of the class. 1/16×1/2=1/32. Hence, the exposure will be 1/32 second.

Speeds of Plates on the American Market

Class-Numbers. No. 1, Photo-Era. No. 2, Wynne. No. 3, Watkins

Class 1/3, P. E. 156, Wy. 350, Wa.
Ilford Monarch
Lumière Sigma
Marion Record
Seed Graflex
Wellington Extreme

Class 1/2, P. E. 128, Wy. 250, Wa.
Ansco Speedex Film
Barnet Super-Speed Ortho.
Central Special
Cramer Crown
Eastman Speed-Film
Hammer Special Ex. Fast
Imperial Flashlight
Seed Gilt Edge 30
Wellington 'Xtra Speedy

Class 3/4, P. E. 120, Wy. 200, Wa.
Barnet Red Seal
Cramer Instantaneous Iso.
Defender Vulcan
Ensign Film
Hammer Extra Fast, B. L.
Ilford Zenith
Imperial Special Sensitive
Paget Extra Special Rapid
Paget Ortho. Extra Special Rapid

Class 1, P. E. 111, Wy. 180, Wa.
American
Ansco Film, N. C.
Atlas Roll-Film
Barnet Extra Rapid
Barnet Ortho. Extra Rapid
Central Comet
Imperial Non-Filter
Imperial Ortho. Special Sensitive
Kodak N. C. Film
Kodoid
Lumière Film and Blue Label
Marion P. S.
Premo Film-Pack
Seed Gilt Edge 27
Standard Imperial Portrait
Standard Polychrome
Stanley Regular
Vulcan Film
Wellington Anti-Screen
Wellington Film
Wellington Speedy
Wellington Iso. Speedy
W. & W. Panchromatic

Class 1 1/4, P. E. 90, Wy. 180, Wa.
Cramer Banner X
Cramer Isonon
Cramer Spectrum
Defender Ortho.
Defender Ortho., N.-H.
Eastman Extra Rapid
Hammer Extra Fast Ortho.
Hammer Non-Halation
Hammer Non-Halation Ortho.
Seed 26x
Seed C. Ortho.
Seed L. Ortho.
Seed Non-Halation
Seed Non-Halation Ortho.
Standard Extra
Standard Orthonon

Class 1 1/2, P. E. 84, Wy. 160, Wa.
Cramer Anchor
Lumière Ortho. A
Lumière Ortho. B

Class 2, P. E. 78, Wy. 120, Wa.
Cramer Medium Iso.
Ilford Rapid Chromatic
Ilford Special Rapid
Imperial Special Rapid
Lumière Panchro. C

Class 3, P. E. 64, Wy. 90, Wa.
Barnet Medium
Barnet Ortho. Medium
Cramer Trichromatic
Hammer Fast
Ilford Chromatic
Ilford Empress
Seed 23
Stanley Commercial
Wellington Landscape

Class 5, P. E. 56, Wy. 60, Wa.
Cramer Commercial
Hammer Slow
Hammer Slow Ortho.
Wellington Ortho. Process
W. & W. Process Panchromatic

Class 8, P. E. 39, Wy. 30, Wa.
Cramer Contrast
Cramer Slow Iso.
Cramer Slow Iso. Non-Halation
Ilford Halftone
Ilford Ordinary
Seed Process

Class 100, P. E. 11, Wy. 3, Wa.
Lumière Autochrome

OUR ILLUSTRATIONS

WILFRED A. FRENCH

The initial picture this month — and repeated in black on page 269 in accordance with our usual custom — is a cover-design in the best sense of the word. Indeed, it is the direct result of participation in the Photo-Era competition, "Subject for Photo-Era Cover," which closed April 30, 1916. For this effort the author, Mrs. Fannie T. Cassidy, received the third prize. The other successful pictures are to be published in our July issue. "Killarney Roses" represents a beautiful and dignified design, is novel and refined in treatment and lends itself admirably to the purpose for which it was intended. In all her floral work Mrs. Cassidy has always shown a sympathetic regard for the refined and delicate beauty of roses and peonies. To this quality the artist is now adding a warmth of expression and breadth of treatment which, in so impressive a design as "Killarney Roses," greatly enhance the general artistic effect. Data: Indoors, October, 9 a.m.; Auto Graflex; Goerz Dagor, $8\frac{1}{4}$-inch focus; smallest stop; 100 seconds; 5 x 7 Seed L. Ortho; dev. in tank; 8 x 10 enlarged print, with P. & S. Semi-Achromatic Doublet, on Eastman Platino Bromide.

The original of the frontispiece emanates from Mr. Rabe's copious portfolio of San Francisco Exposition prints, on whose contents the artist has drawn liberally for Photo-Era. Although the memorable Panama-Pacific Exposition is a thing of the past, its glorious visions will linger permanently in the minds of those who were fortunate to behold them; and when rare architectural beauties are perpetuated by photography in so eminently artistic a manner as has been done by W. H. Rabe, it were thoughtless not to afford our readers occasional opportunities to enjoy them. "The End of the Trail," the sculptor Fraser's imaginative creation, and as presented by a camerist's poetic touch, compels instant admiration. The expression of spent energy of horse and rider is greatly heightened by the mystery of approaching dusk, and the beholder is made to feel the dejection and despair of the hapless group. Data: As stated in a previous issue, Mr. Rabe used an old-style Adlake camera (magazine), using $3\frac{1}{4}$ x $4\frac{1}{4}$ Standard Orthonon plates. As no tripods were allowed on the grounds, he was obliged to rest his camera on a convenient box or seat, as about 10 minutes' exposure was required, using the open lens. In order to keep the camera level and the lines perpendicular, only the upper half of the plate was available, making the negative really one-half the size. The day-views were taken with a $12.50 1A Kodak, on films $2\frac{1}{2}$ x $4\frac{1}{2}$, universal focus, open lens, $\frac{1}{25}$ second. Therefore, no definite data are available with our present picture. The enlarging was all done by daylight, in a transformed chicken-house, with a supply of water from a hose, and an enlarging-apparatus, home-made, from two telescopic starch-boxes, using a 4 x 5 Smith soft-focus lens. Paper used was P.M.C. No. 8.

The pictures that accompany the paper of William H. Rau, the eminently successful commercial photographer of Philadelphia, are self-explanatory. They exemplify the varied possibilities of opportunities offered to an able and resourceful photographer. Paper and illustrations should serve to stimulate the hundreds of budding camerists eager for an opportunity to enter the professional ranks — not ordinary workers, however, but those who have given convincing proofs of first-class technical ability.

"Floating Mysteries," page 270, belongs to H. C. Mann's almost endless series of studies, clouds in landscapes, striking in effect and pleasing in arrangement. Data: 5 x 7 Press Graflex; 12-inch Goerz Dagor; stop, F/6.8; B. & J. 3-time color-screen; afternoon; good light; $\frac{1}{25}$ second; Non-Halation Hammer Ortho plate, 5 x 7; Pyro.

This year there is likely to be considerable travel in the direction of American garden-spots, including the National parks, of which Estes Park, Colorado, is conspicuous in point of scenery. The striking panorama, pages 272 and 273, is by an official photographer, who lives in the locality and, therefore, knows the most favorable aspects of this picturesque region. The comprehensive view, pictured by him, exhibits more than ordinary technical skill, by reason of the uniformly good illumination and clearness of detail, also what remarkably fine work may be done with the Cirkut camera. Data: Odessa Gorge, Rocky Mountain National Park (Estes Park), Colorado; July, 10.30 a.m., bright sunlight; No. 10 Cirkut camera; $10\frac{1}{2}$-inch T. R. Series II lens; stop, F/6.4; no color-screen; exposure, slowest Cirkut speed, with F/6.4 stop; Eastman Cirkut roll-film; pyro, mixed as follows: 1 oz. Eastman's Permanent Pyro; 1 oz. carbonate, and $1\frac{1}{2}$ oz. sulphite, each to 16 oz. water; dilute this stock-solution 1 to 7 with water; 10 x 38 sepia print on Azo Gray B.

The view of Frenchman's Bay, page 275, is by a local professional, who has favored Photo-Era with a number of admirable pictures of the summer-resort *par excellence* of the coast of Maine — Mount Desert. Data: 8 x 10 Universal camera; 12-inch Goerz lens, F/8; May, 10 a.m., sunlight; $\frac{1}{50}$ second; Cramer Crown; pyro-soda.

Readers of Photo-Era no doubt remember the admirable composition, "The Mashed Finger," by H. B. Conyers, that was published in these pages about seven years ago. A similar theme, made by the same artist about the same time, appears on page 277. The artist assured me that the scene is not a pretense, but real; i.e., the expression of pain of the patient is not simulated. As to his companion, he may be an histrionic artist in embryo, although it matters little. The composition is cleverly conceived, and carried out with artistic judgment and skill. Also, there is no apology to be made for objectionable accessories or jarring notes. No data.

Instead of a competition with "Uphill-and Downhill Perspective" as a theme, as Photo-Era conducted several years ago, our readers have an illustrated paper by a competent and experienced artist-photographer, which will teach much-needed lessons in managing the camera when the receding ground goes uphill or downhill. The story is told by Mr. Davis with clearness and authority, and the four illustrations serve their purpose convincingly. No data.

Louis Astrella is to be praised for the admirable manner in which he has treated the difficult theme — his own conception — presented on page 284. The sight of this picture will be appreciated by none more profoundly than the veterans of the Civil War, and the relatives of those who fell in the defense of the Union.

The question may arise in the breasts of many loyal Americans, "Is patriotism dead?" Mr. Astrella's timely subject is one capable of provoking the muse of Ina L. Cook to stirring eloquence, if there were occasion for such an effort. Nevertheless, the privilege to fit patriotic lines to this noble picture is his whoever chooses to take it. The wife or daughter of the departed soldier is obviously the center of interest. With commendable judgment the accessories — the portrait, the flag and the sword, even the flowers that help to commemorate the death of the brave Union soldier — take their places with well-considered judgment, so that the ensemble stands forth as a complete pictorial representation of heroic sacrifice in the performance of patriotic duty. In this respect, no painter or sculptor has acquitted himself more creditably than the amateur photographer Louis Astrella. Data: 2¼ x 2¼ Icarette; 3-inch Zeiss Tessar, F/4.7; May, 2.30 P.M., weak daylight; ½ second; Kodak N. C. film; pyro-soda; Enlarging-Cyko.

The Photo-Era Monthly Competition

DESPITE the arbitrarily severe conditions imposed on the "Home-Portraits" competition — severe because the Publisher carried out the desire of the late Dr. Dwight L. Tracy, to see what amateurs could do in home-portraiture without the usual aids of screens and retouching — they were met in a manner that surpassed our most sanguine expectations. Not only were the entries numerous, but the quality of work gratifying and, in many instances, decidedly admirable. This is evidenced by the successful pictures published in this issue. When one studies these portraits, one is convinced that as regards general artistic qualities they could scarcely be excelled by high-class professional work. In Theron W. Kilmer the photographic profession might have had a brilliant representative. He entered the field of medicine, and retained as his one great hobby the practice of photography. As an amateur he has acquitted himself with distinction, and his pictures are always welcome in the pages of PHOTO-ERA. This is eminently true of his portrait, page 286, which captured the first prize in this competition. Well lighted, modeled and posed, the better to reveal the strong character of the subject, this portrait proclaims itself as an achievement in characterization. Admirable, indeed, is the arrangement and treatment of the hands, which, in this instance, help very materially to indicate the intellectual status of the sitter, and, being lower in key than the face — as they should be — they take their proper place in the composition. Data: 8 x 10 camera; 18-inch Verito; ordinary east-window lighting; stop, F/5.6; 10 seconds; toned in hypo-alum; 8 x 10 Artura print.

Of a totally different character is Mrs. Hayden's portrait of a little boy, page 289. Irresistible in the expression of sweetness and innocence, and charming in the arrangement of the little figure, the picture of "Billie" is truly a delight. It is child-portraiture at its highest in artistic expression; and it must be borne in mind that in the production of these portraits the usual aids have been dispensed with. All the greater credit, therefore, to the skill of such artists as Mrs. Hayden, Dr. Kilmer and Alice Willis! The depth, the beautiful plastic, almost stereoscopic, effect of the little sitter — so highly prized by the Old Masters in photographic portraiture, and so sadly neglected by the exponents of the art to-day — is something that deserves particular attention from students, advanced workers and professional experts alike; for this important quality is due as much to the character and control of the light as to the type of objective employed. Data: Taken on the floor near a south window; Wollensak portrait-lens; stop, F/4.5, at full opening; exposure about 2 seconds; Seed's hydro-metol; direct on Angelo Sepia.

Of compelling charm, too, is the group, "Mother and Child," page 291, by Alice Willis. The beauty of pictorial design — the circular form, as exemplified in a famous way by Raphael in his "Madonna della Sedia" — so spontaneous and unaffected, and the combination of profile and full-face, are features that impart to this group-portrait unusual distinction. The grace of arrangement of the two figures, the obvious technical excellences and the general attractiveness of this picture are sufficiently important to minimize certain technical deficiencies (corners and background). Data: Auto-Graflex, 4 x 5; Zeiss Tessar II b, 6-inch, F/5.6; January, 2 P.M., hazy sun; 1 or 2 seconds; Graflex plate; pyro-acetone; Velours enlargement.

The window-portrait, "A. L.," page 292, commends itself by reason of excellent workmanship. The slight halation helps rather than detracts, in that it subdues the otherwise insistent, regular pattern of the leaded-glass windows, already somewhat obscured by white-muslin curtains. I dislike to say it, but the feet of the fair one have not been treated chivalrously, for their nearness to the camera has resulted disastrously; but better so than to have trimmed the print at this point! The general softness of the light, with its wealth of gradations, is an index of technical efficiency. Data: November, good light; Standard Orthonon; pyro-soda; 6½-inch Goerz Dagor, using single combination; about 13-inch focal length; stop, F/8; 6 seconds; print on A. A. Azo; developed in hydro-metol.

There is harmony of interest and arrangement to a commendable degree in the group-portrait, page 294. The faces have an animated expression, and the modeling, due to skilful lighting, has been left undisturbed. When the light, coming from but one source, is reflected too strongly, or when light comes from two opposite sources, there is the grave danger of producing an equally strong effect on each side of the face or the body, and that is fatal to the artistic result. Mr. Flannery narrowly escapes this dilemma. Virtually, the entire left arm of the man has disappeared. Assuming that it exists in reality, one would wish that it were in evidence; but perhaps it was needed to help steady its owner, seated on the arm of the chair. Also, it might have been better had an armless chair been used in this instance, for then the arms of the young woman could have been seen more advantageously. But what would her partner have done? Data: Graflex camera; Cooke lens; F/3.5; stop, F/4; 1/16 second; Seed 30; pyro-metol; print on Professional Cyko, grade E.

The Beginners' Competition

THERE is a group of artistic camerists in San Domingo, our neighboring republic, several of whose members have been participating in the Round Robin Guild competitions for some time past. One of these workers is Señor Carlos de Moya, whose interesting family-scene, page 295, is as meritorious as any picture of a similar subject that has appeared in PHOTO-ERA. The players in this little comedy appear to be entirely unconscious of the photographer's presence, the arrangement is pleasing and natural, there is a feeling of common interest and complete pictorial harmony. The workmanship, including the lighting, could not be improved, and the general result is very happy. Data: March 3, 1916, 4 P.M.; 5 x 7 camera; Goerz Dagor lens; 7-inch focus; stop, F/6.8; exposure, 1 second; Cramer Inst. Iso., double-coated; hydro-metol; direct print on Cyko Professional Studio; hydro-metol.

(*Continued on page 309*)

ON THE GROUND-GLASS

WILFRED A. FRENCH

Patronizing the Retail-Merchant

Having been identified for many years with the wholesale and retail photographic business, the Publisher appreciates the very able article by T. W. McAllister, in *The Outlook* for March 8, 1916, the merits of which he pointed out in April Photo-Era and which he commends heartily to every photographic worker and intending purchaser. Persons who would patronize mail-order houses may be interested in the following incident, which occurred in the store of Mr. McAllister, himself a hardware merchant in a small Ohio town.

A certain young farmer needed a rifle for immediate use. He walked into a retail hardware store, selected one that suited him, then inquired of the merchant:

"Will you meet X. Y. & Co.'s price on this gun?"

"Certainly we will," was the reply. "We 'll meet any mail-order price, if we 're given the opportunity."

"I 'll take this rifle, then," the young man said. "Just charge it for a few weeks."

"Hold on!" exclaimed the merchant. "If you buy that rifle at a mail-order price, you 'll buy it on mail-order terms. Put it back in the case and I 'll order one for you."

He then insisted that the customer should pay the price of the gun before the order was made out, and that, in addition, he should pay for a stamp, a money-order and the parcel-post charges. The young man finally agreed to this, and at the end of ten days received the rifle. He had paid almost the regular retail-price for the gun. He should have paid the full retail-price, for he received a service which the mail-order house could not grant him. He had the privilege to handle the gun and to decide from a personal inspection, before the order was sent in, whether it was satisfactory.

The Photograph as a Marriage-Promoter

If Cupid has kept a record of the successes he has achieved by means of photography it must be a pretty long one. On the other hand, photography must be held responsible for a large number of disappointments. To be strictly correct, it is the retoucher's clear pencil — see Mr. Ludlum's poem in the March issue — that has pictured many a young woman much handsomer than nature had intended. When the wooer beheld the real object of his admiration he experienced a slight shock. The spell was broken. No doubt members of the sterner sex have practised the same method of deception and the result has been equally disappointing.

When, however, one of the parties — captivated by the magic power of the photograph, and eager to see his or her love in the animated form — undertakes a long journey at considerable trouble and expense, and a disenchantment follows, the consequences are likely to be more serious. Only recently an Italian living in New York advertised in an Italian newspaper for a wife. Attracted by the offer, one Giulietta Serbolini, of Faliero, Italy, corresponded with the advertiser, asking to be favored with his photograph. When she received it she immediately fell in love with "Alessandro," and in a few days embarked for New York. With a beating heart she watched for her admirer as the big steamship made fast at the pier. After an interminable delay the bridge was raised to permit an equally eager throng to come aboard and greet their loved ones. Giulietta waited in vain. Finally, after nearly all the several hundred passengers had gone ashore, the two lovers met, i. e., they identified one another. The lady recoiled, for the original of her treasured photograph, though not old, sickly or disfigured, was very homely — in fact, thoroughly and unequivocally unattractive. The muses evidently had not been nigh when he was born; they had an engagement elsewhere. To be brief, as this is not a novel, Alessandro paid Giulietta's fare to a suburb of Boston, where she had some friends, and shortly afterwards made good the price of her passage from New York to Italy, and the affair, so auspiciously begun, was ended. As to the physical charms of Giulietta, I have learned on good authority that there were evidences; but her face — her face was of the kind that would frighten a horse. Alessandro had never received her photograph.

Extravagance in Advertising

In view of the eagerness, in some quarters, to supply the professional photographer with up-to-date advertising-ideas — some of which are practical only in exceptional cases — the following incident may be of interest.

In a town somewhere in the Middle West, a photographer advertises in the leading local newspaper:

"Our Photographs are the Acme of Perfection."

Not to be outdone, a rival advertises in the same medium as follows:

"In this universe there is
No Such Thing as Perfection
hence we do not claim it.
But we *do* claim to give entire satisfaction, or we will return the money."

Making Hay While the Sun Shines

The cry "How can I make my camera pay?" continues to be heard with growing frequency. As prices of plates and chemicals remain high, the question with many will be, "To take or not to take — my camera out!" Higher-priced materials should not act as a deterrent, however. They should rather stimulate the camerist to be more careful in the choice of subjects; to make every exposure produce a successful picture instead of a number of indifferent ones, and to exercise greater vigilance in the printing.

Enterprising workers have taken their cue from the condition of the chemical market. Searching drug-stores in out-of-the-way places for small stocks of metol, eikonogen and other now precious chemicals, they have reaped a rich harvest and are still busy.

A Speaking Likeness

The painstaking artist, eager to please, remarked to a prospective customer:

"I can make you a portrait of your wife which will be a speaking likeness "

"H 'm! Could n't you do it in what they call 'still-life'?"—*Exchange.*

EVENTS OF THE MONTH

Announcements and Reports of Club and Association Meetings, Exhibitions and Conventions are solicited for publication

Brooklyn Institute of Arts and Sciences

The Twenty-sixth Annual Exhibition of the Department of Photography was held from April 27 to May 21 in the Tissot Gallery of the Brooklyn Art Museum, thus adding another to the already long list of the art museums which have lent their support to pictorial photography. Of the one hundred and forty-eight prints by members and prominent pictorialists fifty-seven were by invitation, and the collection as a whole was of a high standard of excellence.

J. Milton Bergen shows three prints, of which the "Crystal Globe" is the most interesting. All of Henry G. Bohn's six prints are well done, but his "Carnival Night — Venice," attracts most attention. Katherine Brucherseifer has four prints, "The Water-Nymph" being particularly pleasing.

Seven prints are credited to Richard M. Coit. He specializes in interiors, especially cathedrals. His "Cathedral of All Saints — Albany," is an interior, and one of the finest photographic reproductions of such a subject that it has been my privilege to see. It is full of detail, none of which, however, is too assertive. His "Stair to the Gallery" is also worthy of special notice.

Herbert Wheaton Congdon in his four prints illustrates the pictorial possibilities of very meager material. "The Studio-Window," a simple, well-balanced composition, shows the sunlight through a window with a vase containing a few grasses. J. B. Denny's five prints are all interesting, and display his usual originality, particularly "The Challenge," an elk standing majestically on a bluff and silhouetted against the sky. Three nudes and three street-scenes abroad are contributed by Myers R. Jones. His "Joy" is graceful and full of action, with beautiful light-effect.

Of the four oil-prints by James W. Kent, "Just Kids" appeals to me most strongly. That formerly prolific worker, William T. Knox, has not been showing any new work of late, because of ill health. He contributes two of his former successes, however, of which "Tar-Boilers" depicts a group of street-pavers seen through the smoke of a boiling tar-pot. It is an exceptionally well-handled group, full of action and interest.

William E. Macnaughtan's collection of seven prints is superb in technique and composition. His "Sunlight and Shadow," "The Top of the Hill" (see Photo-Era, November, 1914) and "Meadow Brook" were especially commented upon at the private view. Although Mr. Macnaughtan has heretofore specialized in landscape-work his "Head" shows equal success in genre.

"The Susquehanna Valley" and "In the Berkshires" are the most pleasing of Robert B. Montgomery's six prints. Edward Ostrom, Jr., exhibits four prints, all good. "The Excavation" is probably best, and is as full of life as Mr. Knox's "Tar-Boilers." Unquestionably the most original of John Wray's three prints is "The Antiquary's Shop," which has been exceptionally well handled in subduing a mass of obtrusive detail.

The collection by invited contributors is an exceedingly interesting one, as might be expected of such prominent workers. Of Paul Lewis Anderson's three subjects "The Golden Light" appeals to me most. It is a nude figure flecked with the sunlight and shadow of a nearby tree. The effect would perhaps be more convincing were the sunlight a little stronger. "Fujiyama," by Austin A. Breed, is a beautiful decorative study in the Japanese style, consisting of three branches silhouetted against a snow-capped mountain.

Alvin Langdon Coburn's "St. Paul's — London," is a big picture in size as well as pictorial quality. The escaping steam in the foreground is so realistic that one's attention is almost held by it. To my mind, there are two pictures in this: one playing up the escaping steam with the distant spires and domes very much subdued, and another leaving the picture as it is but subduing or eliminating the steam.

Each of the three contributions by Dwight A. Davis attracted much attention, particularly his original conception, "A Bamboo Screen." Instead of using it as a background, Mr. Davis placed it in front of his model, and shows her outlined through its openings against the light in a very effective manner. Probably the best of the three subjects by Arnold Genthe is a pose by Isadora Duncan, the dancer, her profession, perhaps, explaining the concentration of light upon the limbs seen through thin drapery. Personally, I would like to see more of this light on the face and head, as they now blend into the dark background to such an extent that most of the drawing is lost.

I had looked for something better from John W. Gillies. He contributed three figure-studies, all good sunlight-effects except that the shadows are too solid to give that mellow quality necessary to such subjects. Gertrude Käsebier's "Yoked and Muzzled" seems a little crowded in the space, and the oxen do not stand out strong enough against the background. A decorative treatment of three branches is the most interesting of A. Romano's three prints. Dr. D. J. Ruzicka's "Nudes" is a splendid study, pictorially treated, of a woman and child retreating into a clump of bushes, which forms the background.

Readers of Photo-Era are already familiar with "Pennsylvania Station," by Karl Struss, which appeared in the June, 1915, issue. It shows the interior with sunbeams on the walls and pillars, making an exceptionally pleasing effect of light and shade, and the figures happily placed. Edward H. Weston is to be congratulated upon "A Fleck of Sunshine," which is an outdoor-portrait of Ruth St. Denis, with the face entirely in shadow except for a fleck of sunlight on the cheek. Among his three subjects Clarence H. White shows a delightful character-portrait of the late F. Hopkinson Smith, author and painter. Mr. Smith is seen seated in an easy natural pose, reading, and the light falls in such a way that all the character-lines are retained.

Among some of the other exhibitors who showed creditable work and which space forbids commenting upon were: Francesca Bostwick, Alice Boughton, Victor N. Camp, Arthur D. Chapman, Alice Choate, J. R. Cooper, William B. Dyer, G. T. Firth, Paul Gabel, Florence Baker Grey, J. W. Grierson, Edith Hastings, Charles B. Keeler, Leo Pokras, Albert S. Roe, William Gordon Shields, Henry L. Underhill, Bertrand H. Wentworth.

William H. Zerbe.

History of the Photographic Department Brooklyn Institute of Arts and Sciences

In the attic of the old Graham Institute on Washington Street, more than a quarter of a century ago, the Photographic Department of the Brooklyn Institute of Arts and Sciences was inaugurated, and held its meetings there for a number of years.

The organization of the Department of Photography, following closely upon the introduction of dryplates in place of the old wetplate-process, aroused the enthusiasm of amateurs interested in photographic work, and this enthusiasm soon yielded results.

The exhibition of lantern-slides was the principal method of demonstrating the work of the Department, and, in order to stimulate the interest of the members, meetings were held each month in the rooms for this purpose.

When the city took over the Graham Institute property, the Department found new quarters at 201 Montague Street. The equipment of this studio included darkroom and lockers, enlarging- and portrait-cameras and lanterns for projecting lantern-slides. It was here that Mr. Elmendorf made many of the lantern-slides used in his early travelogues. This studio was the home of the Department until the new Academy of Music was built and the present rooms were fitted up for the use of its members.

In 1890 the first exhibition of prints was held in the Art Rooms, 174 Montague Street. At these exhibitions the lantern-slides still held sway, being shown in an illuminated case as well as thrown on the screen. These exhibitions were held annually until the Art-Rooms were no longer available for the use of the Department, and the members were obliged to exhibit their work in the present Studio-Rooms.

The awards for the best prints of the various classes, and also for the best lantern-slides, were decided upon by competent judges, selected by the committee. Among the well-known artists who acted as judges were Benjamin Lander, William D. Murphy, Joseph H. Boston, Carleton Wiggins, Harry B. Snell, George Bellows, H. Deville and Otto Walter Beck. As time went on the awards were omitted and the prints were selected and hung after having been passed on by a jury of men capable of criticizing the photographic merits of the work. These exhibitions always proved an incentive for hard work among the members, as a friendly rivalry existed as to mediums used in the production of the prints. About 1898 the workers of the Department began to show the possibilities of photography from an artistic standpoint. The improvement in bromide papers, the advance made in platinum paper, and the carbon and gum-bichromate process, gave a larger field for the development of their work, and interesting pictorial examples were shown. In late years, by the introduction of soft-focus lenses, hand-coated papers and the oil-process, astonishingly fine results have been obtained. Dr. Meeker was the first president of the Department of Photography, and was followed by Gould Hart and Alexander Black. Later on, under the guidance of the presidents, Professor Hopkins, now of Boston, Professor Pickham and Mr. Myers R. Jones, the Department became one of the most popular branches of the Institute. Throughout its career the Department of Photography has been most fortunate to have as its presiding officers men who have given their time and energy to its upbuilding. Much of the success has been due to the untiring efforts of Messrs. W. B. Coulson, Samuel Holden and Richard M. Coit, and the present president, Mr. William Elbert Macnaughtan.

This year, rooms in the West Gallery of the Museum Building on Eastern Parkway have been set aside for the annual exhibition; with the added space and greater facilities, the exhibition promises to show a fine group of pictorial photographs, demonstrating the progress of the Department since the date of its organization.

"Popular Photography" Merged

The American Photographic Publishing Company announces that, beginning with the May number, its two photographic magazines, *American Photography* and *Popular Photography*, will be combined under the title *American Photography*.

Honors for W. H. Rabe

Few one-man shows, including those that illustrate but one subject, have elicited so much deserved admiration as W. H. Rabe's collection of architectural photographs of the Panama-Pacific Exposition at San Francisco, examples of which have recently appeared in these pages. We learn that Mr. Rabe has had six pictures accepted at Pittsburgh, seven at Wanamaker's (Philadelphia), five at Cleveland, eight at Montreal and nine at Toronto, at each of which places he won high honors. Mr. Rabe is a member of the committee to make arrangements for a salon in San Francisco next autumn. Complete details will be published later.

National Highways Photo-Contest

A Nation-wide photographic contest in the interest of the "Good Roads Everywhere" movement, with cash prizes of $2,600 open to everybody, has been announced at the National Highways Association headquarters. Colonel Theodore Roosevelt and the two well-known writers Miss Ida Tarbell and Mr. Mark Sullivan will serve as judges in the contest.

The photographs selected will be used to establish in Washington a national exhibit on the good-roads problem designed primarily to promote a nationally conceived scheme of highways, and showing a complete picture of the good and bad road-problem as it exists in every section of the country.

In connection with the pending legislation in Congress to have the Federal Government shoulder a part of the task of "good roads" construction, the National Highways Association desires to have adopted a plan for a system of national highways, surveyed and located by expert engineers, so that Federal funds will not be spent in a hit or miss "pork barrel" fashion, but in accordance with a scientific plan, as any railroad is built or as the Government itself did in the case of the Panama Canal.

The cash prizes of $2,600 were subscribed by General Coleman du Pont, Chairman of the Board of National Councillors, and Charles Henry Davis, President of the National Highways Association. The competition will be known as the Du Pont-Davis Road-Photograph Prize-Contest.

The first prize, to be given for the most striking (good or bad) road photograph, will be a $500 cash award. In all there will be 166 cash prizes awarded.

There will be 5 second prizes of $100 each, 20 third prizes of $25 each, 40 fourth prizes of $15 each, and 100 fifth prizes of $5 each, making 166 chances in all for each person entering the contest.

The competition will be kept open for eight months, closing at noon, Tuesday, November 7. All photographs and requests for further particulars should be addressed to "Good Roads Everywhere" Photograph Contest, National Highways Association, Washington, D. C.

St. Louis Camera Club

This progressive club will hold its second annual exhibition of the work of its members in the Art-Rooms of the Central Public Library, St. Louis, Mo., June 5 to 24. In connection with it two different free lantern-slide lectures, showing only the work of members, will be given in the Assembly-Room of the Central Public Library on June 8 and 22 at 8 o'clock P.M.

The officers are striving to make this club the foremost in the city, and interested amateur photographers are invited to become members. The annual dues are only $2, and the benefits and privileges far exceed this in value. Correspondence with the secretary, S. F. Duckworth, Central Public Library, St. Louis, Mo., is solicited.

M. A. A. A. Camera Club

The M. A. A. A. Camera Club, of Montreal, Canada, held its Tenth Annual Exhibition from April 10 to 15, inclusive, in the club-rooms, 250 Peel Street. Exhibits were received from many parts of Canada and the United States, also from Great Britain, and, notwithstanding the unsettled conditions incident to the war, the artistic quality of the work submitted has been very gratifying, and made possible a very presentable exhibition of amateur photography.

Sir William Brymner (President of the Royal Canadian Academy), Mr. Sidney Carter and Mr. T. H. Dupras acted as judges.

The prizes were divided into four classes: Figure-Studies, Landscapes, Waterscapes and Genre, a silver and bronze medal being awarded in each class.

The Prize and Honorable Mention list follows:

FIGURE-STUDIES

First Prize,	O. L. Griffith.
Second Prize,	W. G. Shields.
Honorable Mention,	O. L. Griffith.

LANDSCAPES

First Prize,	B. J. Morris.
Second Prize,	C. W. Christiansen.
Honorable Mention,	H. H. Hyde.
Honorable Mention,	B. J. Morris.
Honorable Mention,	B. J. Morris.

WATERSCAPES

First Prize,	H. H. Hyde.
Second Prize,	Wm. H. Rabe.

GENRE

First Prize,	Wm. H. Rabe.
Second Prize,	John P. Edwards.
Honorable Mention,	Wm. H. Rabe.

The Latest Coupon-Ordinance

Boise, Idaho, recently gave short shrift to an unknown photographer who attempted to inaugurate the coupon-system in that city. The local studio-proprietors at once got together and induced the city-council to pass the following ordinance, imposing a prohibitive license-fee on the sale of photographic coupons:

"Any person, firm or corporation, who, either for himself or as an agent for another, by means of coupons, tickets or part payments, solicits business in Boise City, Idaho, pertaining to photography, copying or enlarging pictures, shall pay a license as follows: for the first day the sum of $25, for the second day $10 and for each and every day thereafter the sum of $10."

The ordinance provides for a fine not to exceed $100 in case of a violation and conviction.

Camera Work Delays Publication

Alfred Stieglitz, publisher and editor of *Camera Work*, announces that, in view of serious difficulties caused by the present war, he is unable to obtain in this country the same grade of work that has been furnished him in the past in Munich and Great Britain. As soon as he can get the things he wants to maintain the technical standard of his publication, Mr. Stieglitz will issue the next number, which will complete the series for the year 1914. He also declares, emphatically, that every subscriber to *Camera Work* will be taken care of in due time.

Sweeten to Taste

J. Rufus Wallingford has entered the photographic arena. Blackie Dawes has ironed out his silk hat, re-waxed his mustache, put on his famous tan spats and is seeking whom he may devour.

The shell-game man has his lay-out spread on the table and the gold-brick gent has packed his satchel with phoney money.

The market-price of sugar, just plain sugar such as you carelessly dumped into your coffee at breakfast this morning, has risen to twenty-five dollars a pound, salt is as precious as platinum and starch can no longer be used on your fine linen.

You don't need to call the police to protect you. But you will probably go down to the surrogate's court and ask to have a guardian appointed if you buy some of the "substitute" developers on the market, and after finding that they don't work as well as they should, you send them to an analytical chemist for a reliable report.

The Kodak Park Research Laboratory has been doing some valuable work for you. Here is what was found in a "developer" that sells for over $30 per pound: metol 10 percent, hydrochinon 16 percent, sodium sulphite 30 percent, *cane sugar* 33 percent. Other constituents (mostly water), of no value as developer, 11 percent. Figuring metol at $50 per pound you could make up this same "developer" for less than $6.50 a pound.

"Sweeten to taste" seems to be the rule in the manufacture (!) of war-time developers. Three contain sugar in quantities varying from 30 percent to 50 percent. But sugar is not the only table-luxury introduced. Another contains 36 percent of table-salt and some pyro, while another contains 40 percent of the ordinary wash-tub variety of starch. The directions on the bottle do not state whether or not this starch acts as a mountant and does away with the necessity for the use of paste.

Anyway, it 's better for the photographer to buy his paste separately from his developer. It 's likely to save him from fifteen to twenty dollars a pound.

The warning is: Make your own substitutes. If you want to use sugar, salt and starch in your developer, go to the grocer. He may charge you war-prices, but not Wallingford prices. The manufacturers of papers and plates are keeping chemical-prices as low as possible and are publishing revised formulas to help out the situation. Watch the direction-sheets and make your own substitutes! — *Studio Light.*

Historically Correct

Picture-fiend — "Where can I see a good motion-picture to-day?"

Her friend — "See 'The Last Days of Pompeii.'"

Picture-fiend — "How did he die?"

Her friend — "I am not certain, but I understand it was from an eruption." — *Photo-play Magazine.*

Photographers' Association of America

Cleveland, July 24 to 29

As already announced in the March issue, the indications are that the thirty-sixth annual convention will go down in history as one of the great assemblages of this organization. The central location of Cleveland, the unique advantages of the Wigmore Coliseum, the "business-getting and business-holding" keynote of the proposed features, not to mention the enthusiasm of an efficient board of officers, are all favorable. A program, given below, has been worked out which will benefit even the veterans of the profession, and no enterprising studio-proprietor can afford to absent himself unless confident that his knowledge and skill excel the talent of the many gifted men and women announced to make addresses and give demonstrations. In this connection it should be remembered that practically all the railroads in the territory from the Mississippi River, north of the Ohio, to the Atlantic Coast, except New England, have granted reduced rates. Round-trip tickets, requiring validation at Cleveland, will be sold on July 22, 23 and 24, with a final return-limit to reach the original starting-point not later than midnight, August 2, 1916. The rate provides for two cents per mile going and returning via the same route.

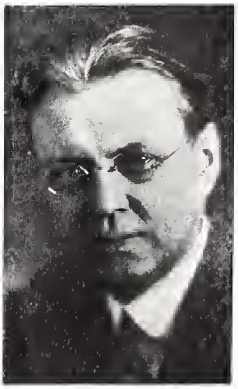
JOHN S. SCHNEIDER

PROGRAM

Monday, July 24

10:30 A. M. — Opening session of Congress of Photography.
2:30 P. M.—Opening meeting.
8:30 P. M.—Reception and dance, Hotel Statler.

CLIFFORD NORTON



B. FRANK MOORE

Tuesday, July 25

9:30 to 10:30 A. M.—Practical demonstration by successful photographers: John S. Schneider, Columbus, Ohio; G. W. Harris, Washington, D. C.; B. Frank Moore, Cleveland.
10:30 A. M.—Session of Congress.
11:30 A. M.—Lecture — "Personality in Business," Anderson Pace, Chicago.
1:30 to 2:15 P. M.— Demonstration of "Home-Portraiture," by Miss Pearl Grace Loehr, of New York City. Miss Loehr is a member of the Women's Federation, and her demonstrations are under the auspices of this organization.
2:15 to 3:00 P. M.— Demonstration by Mr. Edward H. Weston, of Tropico, Cal.
3:15 P. M.— Lecture — "The Photographer as a Business-Man," C. H. Claudy, Washington, D.C.
4:00 P. M.— Successful receptionists will show how to treat customers, show proofs, get orders, etc.
8:00 P. M.— "Moonlight" on the lake. Compliments of manufacturers and dealers.

EDWARD H. WESTON

Wednesday, July 26

9:30 to 10:30 A. M.— Practical demonstrations: J. Anthony Bill, Cincinnati; Chas. F. Townsend, Des Moines; Will H. Towles, Washington, D.C.
10:45 A. M.— Lecture — "Studio-Advertising," L. B. Jones, Rochester.
11:30 A. M.— Receptionists' demonstration.
1:30 to 2:15 P. M.— Demonstration, Mr. Edward H. Weston.
2:15 to 3:00 P. M.— Demonstration, "Commercial Photography," B. G. Heiser, Cleveland.
3:15 P. M.— Business-meeting. Reports of committes, etc.
4:45 P. M.— Demonstration at the Park by Clifford Norton, Cleveland.
5:30 to 8:30 P. M.— Dinner for ladies — Women's Federation.

8:30 P. M.— Illustrated Lecture — "Art-Principles as Applied to Photography," Prof. Edward Lake, University of Illinois.

Followed by an informal dance at Hotel Statler.

PEARL GRACE LOEHR

THURSDAY, JULY 27

Ohio-Michigan Day

9:30 to 10:30 A. M.—Informal demonstrations: Chas. Walinger, Chicago, Ill.; Miss Emme Gerhard, St. Louis; Chas. L. Lewis, Toledo.

10:45 A. M.— Business-meeting. Report of Congress, election of officers, selection of next place of meeting, etc.

1:30 P. M.— Demonstration, Miss Pearl Grace Loehr.

2:30 P. M.— Lecture, "Direct by Mail-Advertising," Tim Thrift, Cleveland.

4:00 P. M.— Special meeting of Ohio-Michigan Association.

4:00 to 6:00 P. M.— Business-meeting of Women's Federation.

8:30 P. M.— Lecture, "Building a Business," W. H. Bass, Indianapolis, Ind.

9:00 P. M.— Symposium and query-box, led by D. E. Agler, Van Wert, Ohio.

Each morning and afternoon of the week there will be a continuous demonstration with the air-brush, showing how to work-in backgrounds on negatives and on prints. Bring prints with you and have them finished.

C. L. LEWIS

EMME GERHARD

FRIDAY, JULY 28

9:00 A. M., Eastern Time — Leave for Cedar Point. Compliments of the manufacturers and dealers.

10:00 A. M., Central Time — Business-meeting in auditorium at Cedar Point.

11:00 A. M., Central Time — Meeting Ohio-Michigan Association at Cedar Point.

Afternoon — a royal good time: Bathing, boating, athletic sports, water-baseball and other water-sports.

Return to Cleveland in the evening.

Convention open to the public from 2:00 P. M. to 4:00 P. M. on Tuesday, Wednesday and Thursday. Admission by ticket.

This program subject to change.

A Great Business-Opportunity

If a well-to-do amateur photographer with real business-ability — even a group would do — should ever wish to enter the industrial field, now is the time! The opportunity advertized in this month's issue is a rare one. It requires ready capital, and the enterprise, backed also by sagacity, practical photographic knowledge and enthusiasm, should prove a profitable one.

The London Salon for 1916

We learn from reliable sources that prospects for a successful London Salon of Photography this year are very bright. Prints intended for this exhibition, to be held at the same place (Galleries of the Royal Society of Painters in Water-colors), should be sent to the Secretary, London Salon of Photography, 5a Pall Mall East, London, S. W., England. The entry-blanks will be ready soon, and will be supplied by Photo-Era upon application. The officers were very enthusiastic over the splendid collection of work from America last year, and hope to see even a better one this year. Let all who have the interests of this great event at heart lose no time to make immediate preparations.

Substitute for X-Ray Plates

About a month ago the daily press and a few of the American photographic journals printed a despatch, purporting to come from Paris, to the effect that Professor Charles Vaillant of the Lariboisière Hospital, Paris, had invented a process whereby radiographs are made directly on sensitized paper instead of from glass negatives. According to Vaillant's new method, expensive X-ray plates are entirely dispensed with, and their substitutes, sheets of sensitized paper, are said to cost but one-twentieth of the glass negative plates. Naturally they save considerable in weight and bulk.

But all this is stale news, because X-ray negative paper has been on the market for a long time. To our knowledge Ralph Harris & Co., Boston photo-supply dealers, have sold the Wellington X-ray Negative Paper for nearly four years. Though not capable of fine detail, like the glass X-ray plates, the paper substitute has special advantages. Being examined by reflected light and not, like the glass negative, by transmitted light, the paper X-ray print can be laid on the body of the patient, or close by. Thus seen conveniently by the surgeon, much valuable time is saved in extracting the bullet or in mending a fracture. But as the Wellington X-ray paper — sold in packages of one dozen sheets in all standard sizes — costs more than half of what glass plates do, and not one-twentieth, as reported from Paris, it is likely that there is more to M. Vaillant's process than what has been thus far reported. Certainly the noted physicist is hardly the man to assume credit, at this time, for a method that must be four years old. Further details may clear up the mystery.

Photo-Era a Reference-Library

There is no better reference-library of photography than that provided by back numbers of Photo-Era. The variety of subjects treated has been great; the writers include the best authorities and most successful practical workers, both professional and amateur, and most of the articles are illustrated. Regular readers who have kept a file of the magazine, or had each volume bound, will find the appended classified lists and those to be published in subsequent issues of value for reference. **Missing copies may be had at 25 cents each as long as the supply lasts.**

LANDSCAPE

Clouds in Landscape	Katherine Bingham	Aug., 1915
Landscapes with Figures	Katherine Bingham	May, 1915
Landscapes	Katherine Bingham	June, 1914
Spring-Landscapes as Camera Subjects	William S. Davis	April, 1914
A Talk upon Landscape-Photography	Frederick F. Ames, Jr.	July, 1913
Landscapes with Figures	Max A. R. Brünner	May, 1913
Spring-Pictures	William S. Davis	April, 1912
Soft-Focus Lenses for Landscape-Work	Arthur Hammond	Nov., 1911
Picturing the Seasons	C. H. Claudy	Oct., 1911
Planes in Landscape-Photography	Walter Zimmerman	April, 1910
Landscape-Photography	David J. Cook	Sept., 1909
Photography Afield	David J. Cook	Aug., 1909
Photographing Water in Motion	J. W. Ridpath	Nov., 1908
Landscape-Photography	A. Horsley Hinton	May, 1907

FLOWERS AND TREES

Garden-Scenes	Katherine Bingham	Sept., 1915
Floral Compositions	William S. Davis	July, 1915
The Wild-Flowers of Pike's Peak	Kenneth Hartley	June, 1915
Picturing the Pond-Lily	W. B. Post	Aug., 1914
Photographing the Garden	Arthur G. Eldredge	July, 1914
Growing Flowers	Katherine Bingham	April, 1914
Wild-Flowers	Katherine Bingham	July, 1913
Tree-Studies	William S. Davis	July, 1912
Flower-Photography as a Hobby	Claude L. Powers	April, 1912
Decorative Flower-Studies	William S. Davis	June, 1911
The Forest and the Camera	Theodore Eitel	Sept., 1910
Spring Flower-Photography	Rev. F. C. Lambert, F.R.P.S.	May, 1910
Flower-Photography	E. Louise Marillier	April, 1909

SUNLIGHT AND ATMOSPHERIC EFFECTS

Photographing Sunsets	H. S. Grinleese	Oct., 1913
Rainy Days	Katherine Bingham	Oct., 1913
When Daylight Ends	Ward E. Bryan	Jan., 1912
Gray Days: Pictorial Suggestions	William Findlay	Nov., 1910
When the Sun is Low — Landscapes	William S. Davis	Aug., 1910
When the Sun is Low — Seascapes	William S. Davis	July, 1910

ORTHOCHROMATIC WORK

Panchromatic Photography by Gaslight	W. R. Bradford	Dec., 1915
Correct Color-Values	William H. Spiller	Aug., 1914
Color-Screens	E. J. Wall, F.R.P.S.	Dec., 1913
The Non-Screen Ortho-Plate	E. J. Wall, F.R.P.S.	Nov., 1913
The Use of Ray-Filters	W. H. Garnberg	May, 1913
Orthochromatic Photography with the Focal-Plane Shutter	Phil M. Riley	Oct., 1912
Seeing Things Correctly — A Lesson on the Judging of Color-Values	William J. Edmonson	Dec., 1911
Panchromatic Plates for Landscape-Work	Malcolm D. Miller, M.D.	Oct., 1911
On the Rendering of Color-Values. I	George H. Scheer, M.D.	June, 1909
On the Rendering of Color-Values. II	George H. Scheer, M.D.	July, 1909

COLOR-PHOTOGRAPHY

Black-and-White Prints from Autochromes	C. Fingerhut	Nov., 1915
The Latitude of the Autochrome Plate	Sydney Herbert Carr	May, 1915
Interiors in Natural Colors by Reflected Light	H. F. Perkins, Ph. D.	April, 1915
Lantern-Slides in Natural Colors. I	William H. Spiller	Feb., 1915
Lantern-Slides in Natural Colors. II	William H. Spiller	Mar., 1915
The Present Status of Color-Photography. I	E. J. Wall, F.R.P.S.	Sept., 1914
The Present Status of Color-Photography. II	E. J. Wall, F.R.P.S.	Oct., 1914
Telephotography with Autochrome Plates	H. F. Perkins, Ph.D.	July, 1914
Remarks and Observations on the Practice of Autochrome-Photography	R. Namias	June, 1914
Amateurs and the Autochrome	James Cooper	Aug., 1913
Color-Photography by Artificial Light	T. Thorne Baker	Nov., 1912
Color-Photography	Henry Leffmann	June, 1912
The Autochrome in Winter	Alfred Holmes Lewis	Jan., 1912
Color-Photography vs. Painting	Frederick H. Evans	Mar., 1911
The Autochrome Plate in its Relation to the Color-Theory of Young and Helmholtz. I	Fred D. Maisch	Dec., 1909
The Autochrome Plate in its Relation to the Color-Theory of Young and Helmholtz. II	Fred D. Maisch	Jan., 1910
Observations on the Autochrome-Process	J. Appleton Burnham	May, 1910
The Lumière Color-Process Simplified	Maximilian Toch	July, 1909
A Simple Autochrome Method	Alfred Watkins	Feb., 1909
A New Method of Developing Autochrome Plates	M. Paul Torchon	Nov., 1908
The Treatment of Incorrect Exposures of Autochromes During Development	A. & L. Lumière and Seyewetz	Sept., 1908
Persulphate vs. Permanganate as the Reversing-Solution for Autochromes	G. E. H. Rawlins	Sept., 1908

MARINES AND WATERSCAPES

Water-Front Scenes	William S. Davis	Sept., 1915
Photography on Coastwise Steamers	Phil M. Riley	Aug., 1915
Observations on Marine Photography	F. A. Walter	Aug., 1914
Waterscapes	Katherine Bingham	Aug., 1914
Photographic Work on a 25-Foot Motor-Boat	Alfred F. Loomis	Nov., 1913
Shore-Scenes	Katherine Bingham	Sept., 1913
Marine-Studies	Katherine Bingham	Aug., 1913
Marine-Photography	B. F. Langland	July, 1913
Marine Photography — Proper Values	C. H. Claudy	Aug., 1911
Surf- and Seashore-Photography	William S. Davis	Aug., 1908

ARCHITECTURE

Pyro-Acetone Developer as a Preventive of Halation	William H. Zerbe	Sept., 1915
Public Buildings	Katherine Bingham	July, 1915
Architectural Photography	Robert W. Tebbs	July, 1915
How to Prevent Halation	Philip Conklin	July, 1915
My Home	Katherine Bingham	Nov., 1914
Extremes of Contrast Indoors and Out	George W. Hance	Oct., 1914
The Photograph of the Home	Flora Lewis Marble	June, 1913
Architectural Subjects	William S. Davis	Mar., 1913
Architectural Subjects	Katherine Bingham	Mar., 1913
Artistic Interiors	E. H. Weston	Dec., 1911
Architectural Telephotography	Maurice Houghton	April, 1908

SPEED-WORK

Outdoor-Sports	Katherine Bingham	June, 1915
Street-Scenes	Katherine Bingham	April, 1915
Successful Speed-Work	C. H. Claudy	April, 1911
Speed-Photography in Winter	C. H. Claudy	Jan., 1911
Rendering Motion in Pictorial Photography	H. B. Whistler	Mar., 1910
High-Speed Plates and Their Treatment	Phil M. Riley	June, 1908
Pictorial Possibilities in High-Speed Work	C. H. Claudy	April, 1908
Moving Objects: A Note for Hand-Camera Workers	A. G. Workman	Nov., 1907

TELEPHOTOGRAPHY

The Versatility of the Telephoto-Lens. I	A. E. Swoyer	July, 1914
The Versatility of the Telephoto-Lens. II	A. E. Swoyer	Aug., 1914
Telephotography with Autochrome Plates	H. F. Perkins, Ph.D.	July, 1914
Telephoto-Work	Katherine Bingham	May, 1914
Practical Telephotography	Stephen E. Woodbury	Aug., 1909
Two Great Discoveries in Aerial and Instantaneous Telephotography	John W. Turner	Dec., 1908
Calculating Exposure for a Telephoto-Lens	Phil M. Riley	Oct., 1908
Architectural Telephotography	Maurice Houghton	April, 1908

Our Illustrations

(Continued from page 301)

In R. W. Stevens, of Manitoba, Photo-Era has discovered an admirable pictorialist. His sporting-picture — the man carrying a large salmon on his back, published in our April issue — will be pleasantly recalled. Here, page 296, we have a bit of Canadian scenery that has been rendered with refined artistic feeling. The composition, with the dark and massed reflection forming a foreground that serves a solid pictorial base for the delightful superstructure, is a happy conception. Data: Small Poco camera; 10 A.M.; good light; anastigmat lens; $2\frac{5}{8}$ x $3\frac{1}{2}$; Imperial plate; M. Q.; stop, F/32; $\frac{1}{25}$ second; Aristo Self-Toning print.

The author of the picture, page 297, that breathes the spirit of protection of the home, is a woman not afraid to proclaim her loyalty to the flag under which she lives. The salute of the embryonic defender of his country is the keynote of this picture, and may be contemplated with not too close a connection with "Memorial Day," page 284. Data: Eastman 5 x 7; $7\frac{1}{2}$-inch B. & L. lens, U. S. 4; March, 4 P.M., cloudy and very dull; $1\frac{1}{2}$ second; Defender Ortho. Non-Hal.; Eastman M. Q.; Professional Cyko Plat.

Estes Park, Colorado

For the benefit of those who may not be familiar with the precise geographical boundaries of the great National park in Colorado — a characteristic view in which, Frank W. Byerly, the official photographer of Estes Park, adorns this issue — we reprint the data kindly supplied by Mr. Byerly.

The panoramic picture of the Odessa Gorge is in a region whose official title is "The Rocky Mountain National Park," which was reserved by an act of Congress in January, 1915. It extends some thirty-five miles along the Front Range (the Continental Divide) in Northern Colorado.

Estes Park is a very small region on the eastern slope of the Continental Divide just north of Long's Peak, cutting into Rocky Mountain National Park eastern side about half-way between the north and south boundary lines. Since the creation of the R. M. N. Park, we now speak of Estes Park as the Estes Park region of Rocky Mountain National Park, owing to the fact that Estes Park was named many years ago. To some this may be a bit confusing; but I am sure that all will readily understand this explanation. The Odessa Gorge lies ten miles southwest of the Estes Park village in R. M. N. Park, and is a portion of the remarkable scenery for which the Estes Park region has been so long famous.

Questionable Photographic Syndicates

As Photo-Era readers are aware, advertisements of concerns have appeared in these pages, from time to time, offering tempting terms to amateur and professional workers to become representatives in their own locality for certain "Photographic Syndicates," for the purpose of procuring news-photographs. This formidable designation is likely to impress the many workers who desire to make their cameras pay; but before making any definite arrangements with any of these firms — some of which have been highly recommended to the Publisher, and whose reliability is now open to doubt — persons are requested to communicate with Photo-Era. It is the Publisher's earnest desire to forestall any disappointing results in connection with the numerous firms who desire to profit at the expense of trusting and inexperienced workers.

A week before this issue went to press, a correspondent sent the Publisher a circular letter that he had received from one of those self-styled photo-syndicates which is quite plausible in its claims and general appearance. The letter-head looks quite formidable, with the firm's name in large bold letters and, in one corner, the legend "Telephone Connections," and in the other, "Cable: Synphoto, W. U. Code." Among the numerous conditions is that, upon the payment of $3.00, a badge will be sent to the newly appointed agent which will enable him to take photographs in places generally inaccessible.

Well, acting upon impulse, the Publisher sent a trusted New York friend to the address given, in William Street, to interview the manager of this concern, and the answer came back: "No such party there. Totally unknown to the superintendent, janitor or elevator-men." A similar inquiry by another friend brought no clue. And yet the "manager" maintains a correspondence and, from his headquarters in William Street, answered letters addressed to him quite recently. Of course he has no telephone or cable service, although it costs nothing for cable registration in the code-book.

It only goes to show that it is easy to speculate successfully upon the credulity of the gullible, that a clever crook can hoodwink the authorities, and that many people really enjoy being bamboozled.

No Connection With Mr. Zerbe's Class-Work

In November Photo-Era, 1915, appeared a short paragraph about a course in photography with which Mr. Clarence H. White, Paul Lewis Anderson, Augustus Thibaudeau and William H. Zerbe were stated to be identified. As the statement was received from what was regarded as a reliable source, it was published without hesitation, only to be informed by Mr. Clarence H. White to the effect that the first three gentlemen had no connection, whatever, with this particular photographic course. We now publish this correction in justice to Mr. White, who conducts special classes for winter and for summer, as have been referred to frequently in these pages.

Photography for Nature-Lovers

We could wish nothing better to the photographer of nature-subjects than to own a copy of *Photography for the Sportsman-Naturalist*, by L. W. Brownell. It is by far the most practical and complete book on the subject in the English language. Its 310 pages are devoted to a full description of the necessary apparatus, including the telephoto-equipment; the photography, in their respective habitats, of wild animals; the smaller mammals, birds (and birds' nests), insects, fish and other forms of aquatic life, reptiles, and amphibia and animals in captivity. There are two chapters on taking wild-flowers, trees and fungi, and a chapter on camp and woods. The numerous illustrations — original photographs by the author — are admirable, and unlike the hasty material one sees so often and which are an insult to an intelligent public. This splendid book will be sent by the Publisher of Photo-Era on receipt of $2.00, plus postage, according to zone. Shipping-weight of volume, 40 ounces.

◆

Under his feet the reading man puts the printed record of what men have thought and done, and thereby gets his head up in the fog-free atmosphere of the everlasting morning, where only he finds that fair inspiration which impels to big and true action. The man who reads is the man who leads.— *Glen Buck.*

BOOK-REVIEWS

Books reviewed in this magazine, or any others our readers may desire, will be furnished by us at the lowest market-prices. Send for our list of approved books.

The Spell of Egypt. By Archie Bell. Octavo, 366 pp. Decorated cover. Copious illustrations, with numerous original color-plates, and special photographs by E. M. Newman. Price, $2.50; carriage-paid, $2.70. Boston, U. S. A.: The Page Company.

Persons who have visited the land of the Pharaohs, retaining only pleasurable recollections of relics of an ancient and wonderful civilization, were greatly disturbed when, last year, it seemed that Egypt was about to be invaded by a hostile army, and feared for the safety of the Egyptian Museum, at Cairo, with its priceless treasures. But that danger appears to have been averted. In any case, the numerous monuments that speak eloquently of Egyptian greatness in painting, sculpture and architecture are as sure to greet the eye of the tourist when the great war is over as before it began, unless destroyed by an earthquake. In the meantime, a tour through lower Egypt, which teems with unique attractions — an acquaintance with which is essential to every one's education — may be made in spirit with the aid of Mr. Bell's volume, "The Spell of Egypt." Assisted by photographs and color-plates, the author describes pleasingly and graphically journeys up the Nile on the typical Nile-boat — the Dahabiyeh — the domestic life of the natives (the Fellaheen) and the many sights of the capital city, Cairo. Then come the great temples of Luxor, Karnak, Thebes (with the Colossi of Memnon), Abu Simbel or Ipsambul, Denderah, Kom Ombo and Philæ, the Sphinx and the Pyramids of Gizeh. The author describes also the labors of the great Egyptologists, Mariette, Ebers and Maspero, and the work of excavating for hidden treasures, only a small part of which have yet been brought to light.

The arrival at Alexandria, the principal seaport of Egypt, is preceded by a visit to the Azores — with its beautiful city of Ponta Delgada — Madeira and Gibraltar, a delightful description of which is given in several chapters.

That Egypt is an ideal place for a change and rest is conceded by all who have traveled in that interesting country — a statement verified and emphasized by the author.

The Balance of Light and Shade in Portraiture. By Wm. H. Towles, Ex-Pres. P. A. of A. Large octavo; cloth-bound; 45 pages, 46 illustrations; price, $1.50, net. Cleveland, Ohio: Abel's Publications.

Here is a book for the purist in photographic portraiture. Mr. Towles works entirely by concentration and gradation of light and shade upon the sitter, believing it preferable to make negatives under the light than in the darkroom. He believes that the whole secret of making pictures lies in the education of the eye to see understandingly the photographic value of light; that with the eye so trained one should be able to make a picture anywhere, at any time, where there is sufficient light to do it with. He casts aside the old theory of a 45° angle, stating that it makes no difference where the light comes from so long as one has the means of control and understands proper balance. Darkroom-manipulation he regards as simply the mechanical side of the work. When the light under the skylight is properly balanced, any one can develop the plate, provided he knows when it has reached sufficient density, for no manipulation will give the same chemical value as the proper registration of light. In his opinion darkroom-manipulation breeds carelessness under the light, and during a rush-season the darkroom-work may be slighted and the studio-standard lowered. But if the balance of light and shade be mastered, the proper quality will be in the negative despite hasty finishing.

Mr. Towles describes his methods in the studio and by the home-window so clearly as to benefit every posing-artist greatly, laying special emphasis upon the disastrous results of direct lighting and the improvement effected by the use of suitable reflectors and diffusing-screens, thereby changing the direct light to a volume which gives greater illumination, lengthens the scale of tonal values in the negative and ensures better balance. The results are soft, delicate rendition of flesh-tones and corresponding illumination of the shadows, better color-values, more natural likeness, greater character, more delicate drawing and realistic modeling. Forty-six halftone illustrations reproduced from absolutely "straight" prints without retouching or manipulation of any sort illustrate the text.

The book will be sent, post-paid, upon receipt of $1.50, by the Publisher of Photo-Era.

A Live Camera-Club for Detroit

The tendency among the old-established social clubs to be indolent and phlegmatic, a course that has resulted in the demise of a number of otherwise worthy camera-clubs, has had its effect upon the Camera-Club of Detroit. Solicitous of the future welfare of this club, several members have been the means of readjusting its affairs, appointing a new board of management and moving into new and superior quarters. The new board has aroused a spirit of enthusiastic activity among the members. A schedule has been prepared in accordance with which a lecture or other entertainment will be given at least once in two weeks, the first of which is expected to be a paper on the history of color-photography, by one of the members. There is to be something going on all the time — exhibitions, lectures and demonstrations, from which members will derive practical, permanent benefit.

The new rooms of the club are in Detroit's newest skyscraper, the Kresge Building, facing Grand Circus Park, in the heart of the city. There are commodious work-rooms, and a well-lighted gallery finished in light-gray burlap and with silver-gray furniture to match the walls. To maintain a select membership of high efficiency, the limit is to be one hundred for the present. A fund has been raised to meet all expenses for the coming season, and there is every prospect that Detroit will soon have a camera-club that will be a credit to the city.

The initial pictorial exhibition in the club's new quarters, held for two weeks, beginning May 22, consisted of the Prize and Honorable Mention pictures of Photo-Era for the year 1915 (about two hundred prints). An account of the club and a description of the new rooms will appear in an early issue of Photo-Era; also a collection of the work of members of the club.

❧

In all the branches of art the danger is to imitate mechanically masters who are given as models and who are themselves heavy, false and conventional.

Henry Havard.

LONDON LETTER

CARINE AND WILL A. CADBY

The romance of a negative taken on Captain Scott's last Antarctic expedition is revealed in a recent number of *Land and Water*, and its true history equals anything that has been conceived in fiction on such a subject. It appears that the search-party sent out to look for Captain Scott, found, eight months after his death, at his last camp, an undeveloped negative, taken by Lieutenant H. Bowers, entitled "The South Pole — Skackelton's Halfway-House." It was subsequently developed at Cape Evans, and a reproduction is given in *Land and Water*. It represents Captain Scott and his two companions standing by their little tent, in the midst of snow and ice, with a pair of skiis in the foreground.

It seems marvelous that this tiny latent record of events should have been able to survive the storms of the Polar Region for so long a time, when the man who took it had perished. But there it lay, presumably in a perfect preservative for inanimate matter; and on being brought down to Cape Evans and developed, revealed its graphic secret of the past activities of the dead heroes.

To those who look below the surface the effect of the war is very marked on photography here. Although our manufacturers still advertise in the photographic press just as in pre-war days, it is noticeable that they proclaim no novelties or new departures, either in apparatus or printing-materials. This is as it should be, for at the present moment there are very few photographers who would be inclined to consider such things, even if the manufacturers could spare time from their Government contracts to carry them out. Those who continue to take photographs — and their name is legion — appear to do so on strictly war-lines, that is, with severe economy and enhanced efficiency. Most noncombatants seem to have realized not only that the war will last a long time, but that there is a particular niche for each one in the changed conditions; and few, indeed, are the photographers who are not in some way or another devoting at least some part of their time to war-work. A goodly number are using their craft under the direction of the Snapshots-from-Home League for the benefit of the soldiers and sailors, and as both army and navy are still expanding, the demands on them grow continually. Others have been pressed into photographic work in connection with air-craft, an ever increasing and developing sphere of activity, as may be seen by the advertisements of the Military Aëronautics Directorate for long-focus large-aperture anastigmat lenses for the equipment of military aëroplanes; and obviously the work that these lenses begin in the air has to be completed on earth by highly trained and skilful development of the latent image.

And, lastly, there is the melancholy task of record-work as to damage done both here and across the Channel by enemy-explosives. But the day may come when these dull prints may turn out to have a very high value.

A rather remarkable bust of Joseph Conrad by Jo. Davidson (the American sculptor) is at present on view at the Leicester Galleries. The work shows strong and simple modeling, and a big effort has been made to suggest the piercing quality of Mr. Conrad's eyes. Of course, sculpture is not to be mentioned in the same breath with photography; but all the same, we could not help noticing, perhaps, with a wicked little bit of satisfaction, that, after all, our Cinderella art sometimes can render certain things at least more realistically and, perhaps, more truthfully than her greater and more important sisters. On both the occasions when we photographed Mr. Conrad we noticed the striking attraction of his eyes, which are not only piercing but deep. The whole strong face seemed focused in them, and we did our utmost to bring out in our negatives their animation, activity and color, all so typical of the noble Polish race. Standing before Mr. Davidson's bust, we could not help thinking that, at least in the matter of Joseph Conrad's expression and eyes, our photographic negatives scored a point.

There has been a reawakening of photography in London, stimulated, no doubt, by the fear that some of our great and ancient buildings may be injured; for underneath a coldly critical, almost disparaging attitude towards our famous city we hide a very deep love and intense pride. It is good for Londoners that they should be pricked up to appreciate the treasures bequeathed to them by the past, so that it is satisfactory to hear that a society has been started whose object is to study London from its pictorial side in all manner of ways. It is called, "The School of London Landscape," and is fortunate to have for its founder and general father Mr. A. H. Blake, whose pictorial work is so well known, and who knows his ancient London as well as his modern. At their last meeting, the London Landscapists had an interesting paper read them by Mr. Alvin Coburn, on the pictorial work of London from his own personal experience. There are nearly one hundred members already of this society, all keen and interested. In the discussion that followed Mr. Coburn's paper, no less than twelve joined.

Mr. Coburn has been having an amusing correspondence with Mr. Anthony Guest in *The Amateur Photographer*. Mr. Guest is a well-known art-critic who had been writing about Mr. Coburn's pictures at the Hammersmith Society's exhibition. Mr. Coburn finds fault with one of Mr. Guest's criticisms. Strangely enough, it was the same as we made ourselves in one of our London Letters in regard to the skies in his Grand Canyon photographs. He begins his letter by stating that he makes pictures and that Mr. Guest writes about them, which shows it is an unequal duel of words, and that however at fault he is the expert of words is sure to beat. The readers of *The Amateur Photographer* scored, for the letters of both writers made attractive reading. The thrusts were subtle, and there was a generous spirit underlying them. One missed this lightness of touch in a letter by a correspondent in last week's *Amateur Photographer* who takes up the cudgels for Mr. Coburn in a rather crude manner.

A Sheer Waste of Postage

Talking of postage, so far as it concerns the photographic worker, I am reliably informed that there are still many persons in the United States who look upon Porto Rico as foreign territory, for they persistently put a five-cents postage on letters, as if they were intended for France or Germany; whereas American postage only is required — two cents for each ounce. They also direct letters of inquiry to the American Consul in Porto Rico, rather than to the Governor of Porto Rico. The island is American territory, the same as are Hawaii and the Philippines. Of course Photo-Era readers will not err in these respects.

❧

When men found that goods would sell by advertising their merit, they began to put more merit into the goods in order to advertise it.— *David Gibson.*

WITH THE TRADE

Seeing America First

Even disregarding the fact that European travel has been suspended on account of the war, "Seeing America First" is good doctrine. Unfortunately, certain people have taken advantage of the traveling public, so that a journey to the National parks, for instance, costs so much more than one to Europe that the number of stay-at-homes this season is not likely to be reduced in that direction.

Of course, there is no need to select localities to visit which call for excessive traveling and hotel expenses. New England offers a great variety of scenic beauty, agreeable climate, excellent travel-facilities and fine hotel-accommodations at reasonable rates. Boston, Cambridge, Lexington and Concord, teeming with historic landmarks and associations; Maine, with its rock-bound coast, countless islands and lakes of fascinating beauty; the White Mountains, the Green Mountains and the Berkshires; and attractive picture-material everywhere, draw painters and camerists from all parts of the country.

Persons longing for a restful and profitable summer should send for a copy of "Where to Stay in Vacation-Land," to Room 15, North Station, Boston, Mass.

Advertising-Card Sells Pencils

In these columns we have never spoken about the very effective black and white sign issued by the Joseph Dixon Crucible Company to advertise Dixon's Best White, No. 352, Pencils, which are admirable for use in photo-albums and on photo-mounts, as well as for marking and producing highlights on dull-finished photographs and negatives.

A leading Boston photo-supply dealer placed this sign on one of his show-cases and immediately created an interest in these white-writing pencils, having now a regular call for them. This suggestion should commend itself to the trade in general.

By writing to the Joseph Dixon Crucible Company, Jersey City, N. J., any reliable merchant can obtain a supply of these pencils and also the show-cards.

A New Ansco Catalog

Ask your local dealer, or write direct to the Ansco Company, Binghamton, N. Y., for a copy of the latest catalog, which, in illustrative and typographical attractiveness, excels anything this progressive firm has yet issued. It describes in detail the comprehensive line of Ansco cameras, fifty-eight different styles and models, Ansco Speedex film and film-packs, Cyko paper in all amateur grades, Ansco chemicals and many sundries.

New camera-models have been added this season. They are the Ansco Junior series and the Ansco V P No. O in two styles. The Junior cameras are all equipped with the new Ansco self-leveling view-finder. The Ansco V P No. O has the distinction of being the only camera in the world taking pictures $1\frac{5}{8}$ x $2\frac{1}{2}$ that has a device for focusing, thus enabling the user to make full use of the anastigmat lens. Other new Ansco products described include the Ansco film-pack adapter, and Enlarging-Cyko Contrast paper, supplementing this already popular and varied line.

A New Goerz Lens

The C. P. Goerz American Optical Company announces a new process and general purpose lens known as the Rotar. Crisp definition, snap and brilliancy, the requirements in a great variety of photographic work, have been made greater considerations than speed. The new lens is an F/8, highly corrected anastigmat of Goerz quality, consisting of two symmetrical, uncemented combinations. It is free of spherical and chromatic aberration, and has a flat field over the plate for which it is listed, thus fitting it admirably for photo-engraving, copying, enlarging and general commercial work.

Ilex Shutters and Lenses

A new catalog of Ilex shutters and lenses has been issued and will be mailed to any address upon request to the Ilex Optical Co., Rochester, N. Y. The Ilex shutter is unique in that it is neither operated nor controlled by air-cylinders, gears being employed to retard and control the speeds. This fact, together with compactness and simplicity of construction, renders it nearer to watch precision than any other instrument on the market. The Ilex anastigmat provides a general-purpose lens of high corrections and excellent quality, yet one selling at a moderate price and with a money-back guaranty if unsatisfactory.

The Exportation of British Goods

What seemed like an incomprehensible blow directed against British trade in the Order in Council of March 16 has been somewhat mitigated by the explanation that it is not absolute. This mandate prohibits the exportation to all destinations outside the British Isles of photographic sensitive films, plates and papers, whether exposed or not. The discovery by the government that these materials in certain instances had been exposed in England, repacked and sent abroad as unexposed, later to be developed to the advantage of the central powers, is understood to have been the cause of this. It has been explained, however, that under certain conditions special licenses for export will be issued so that American users of British goods will continue to be able to obtain them, although the attendant formalities may occasion delay in shipment.

No Foreign Films for Germany

Upon the representation that German industry was not in a position to supply the home-demand for photographic roll-films, permission was requested by dealers for the importation of French and English films, to which the German Government assented, says *Photographische Industrie*. Afterwards, however, upon inquiry being made, it was found that the present demand for films can be supplied fully by German manufacturers, as sufficient quantities are being produced in that country. The Imperial Chancellor has therefore again suspended the importation of French and English films.

The same exchange states that efforts which were started in Holland recently to establish an independent photographic industry in that country have not been successful, and the project has fallen through.

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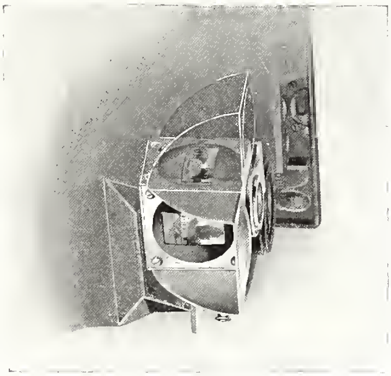
You get free

three essential features when buying an

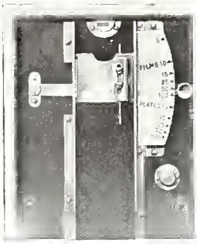
Ansco Camera

if price and quality are compared with other makes:

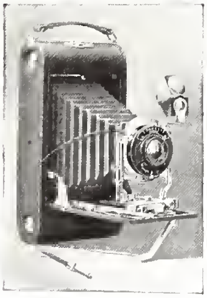
Exact
Radius
Finder



Automatic
Adjustable
Focusing
Scale



Safety
Spool-holding
Device



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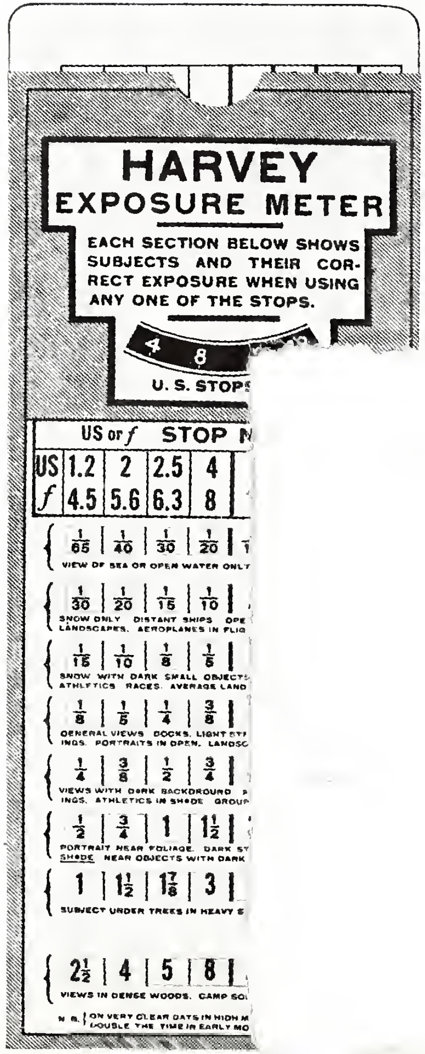
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GENERAL VIEWS DOCKS. LIGHT ST
INGS. PORTRAITS IN OPEN. LANDSC
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VIEWS WITH DARK BACKGROUND
INGS. ATHLETICS IN SHADE GROUP
1/2 3/4 1 1 1/2
PORTRAIT NEAR FOLIAGE. DARK ST
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SUBJECT UNDER TREES IN HEAVY S
2 1/2 4 5 8
VIEWS IN DENSE WOODS. CAMP SO
N. B. ON VERY CLEAR DAYS IN HIGH M
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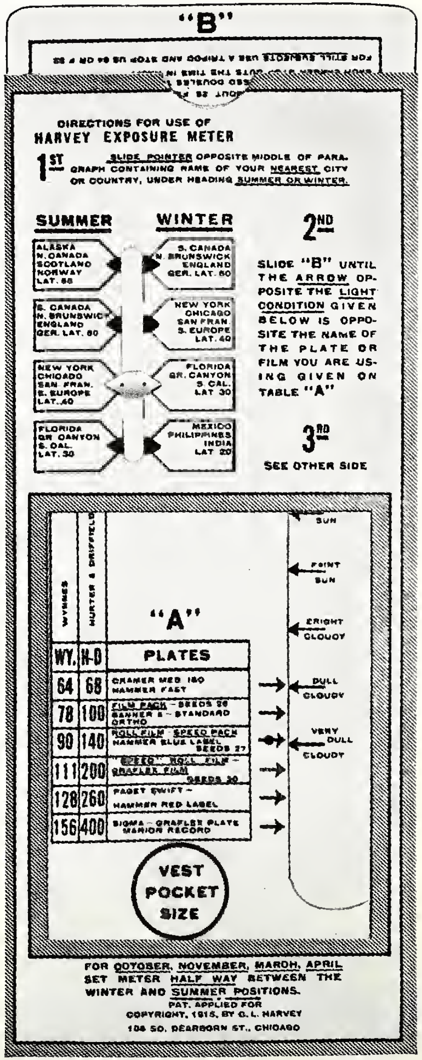
"B"
FOR STILL SUBJECTS USE A TRIPOD AND STOP US 64 OR f 32
DIRECTIONS FOR USE OF
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1ST SLIDE POINTER OPPOSITE MIDDLE OF PARAGRAPH CONTAINING NAME OF YOUR NEAREST CITY OR COUNTRY, UNDER HEADING SUMMER OR WINTER.
SUMMER
WINTER
ALASKA N. CANADA SCOTLAND NORWAY LAT. 56
S. CANADA N. BRUNSWICK ENGLAND GER. LAT. 50
S. CANADA N. BRUNSWICK ENGLAND GER. LAT. 50
NEW YORK CHICAGO SAN FRAN. S. EUROPE LAT. 40
NEW YORK CHICAGO SAN FRAN. S. EUROPE LAT. 40
FLORIDA GR. CANYON S. CAL. LAT 30
FLORIDA GR. CANYON S. CAL. LAT. 30
MEXICO PHILIPPINES INDIA LAT 20
2ND
SLIDE "B" UNTIL THE ARROW OPPOSITE THE LIGHT CONDITION GIVEN BELOW IS OPPOSITE THE NAME OF THE PLATE OR FILM YOU ARE USING GIVEN ON TABLE "A"
3RD
SEE OTHER SIDE
WYNNES
HURTER & DRIFFIELD
"A"
WY. H-D PLATES
64 68 CRAMER MED. ISO HAMMER FAST
78 100 FILM PACK – SEEDS 26 BANNER X – STANDARD ORTHO
90 140 ROLL FILM SPEED PACK HAMMER BLUE LABEL SEEDS 27
111 200 "SPEED" ROLL FILM – GRAFLEX FILM SEEDS 30
128 260 PAGET SWIFT – HAMMER RED LABEL
156 400 SIGMA – GRAFLEX PLATE MARION RECORD
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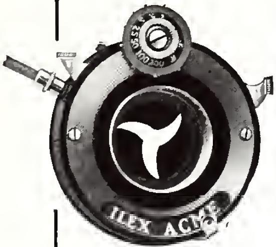

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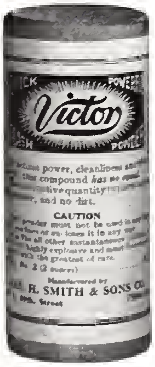

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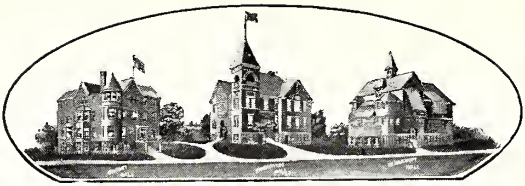

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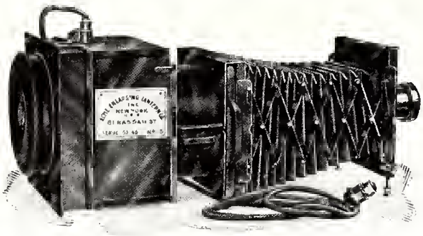

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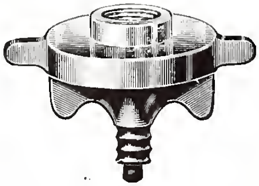

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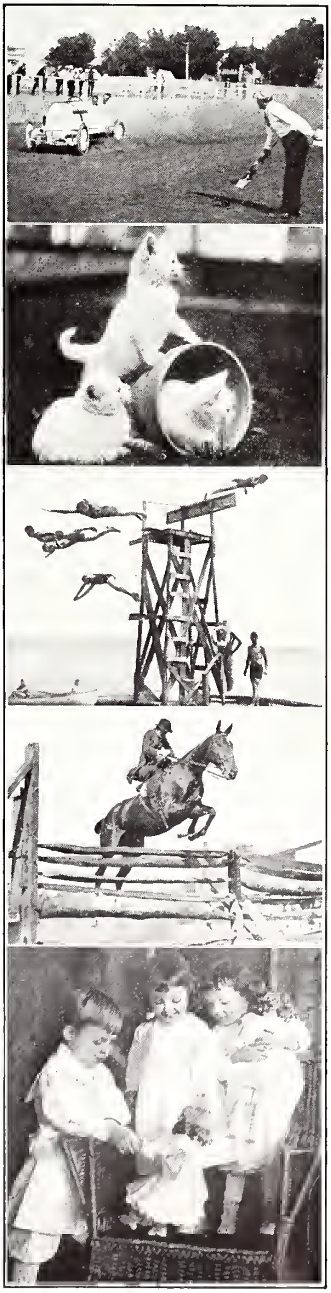

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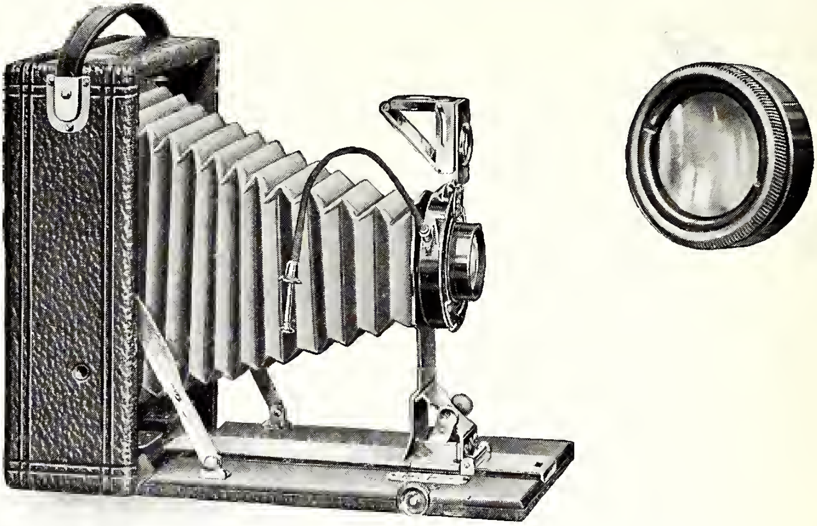

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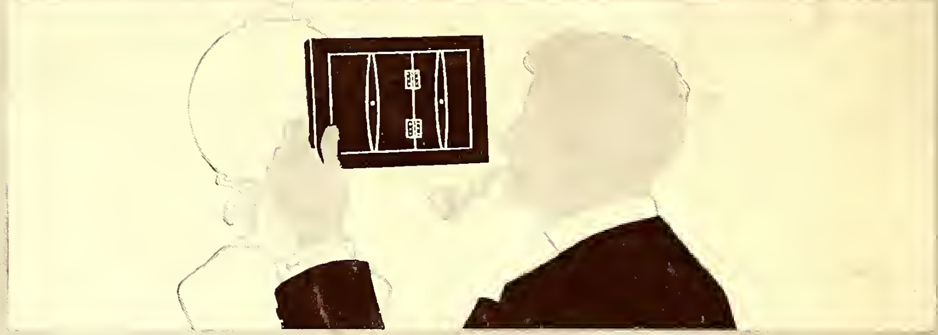

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